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Bulletin

BOOK PRODUCTION

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28

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Another SAUNDERS BOOK on Page 3

SUBJECT INDEX TO THIS ISSUE

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Note: The value of this subject index has been questioned. The Editor would be glad to hear from any reader as to its usefulness to him or its relative importance as compared with the table of contents. A postal card will be satisfactory.—Ed.

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THE CIRCULATION AS A FACTOR IN PROSTATIC SURGERY*

GEORGE GILBERT SMITH, M.D.
BOSTON

In man, the age at which obstructive changes in the prostate occur is often characterized by degenerative lesions in other parts of the body. In no organ or group of organs are these lesions of more importance than in the cardiovascular system. The heart may be so severely damaged that a very slight additional load will induce complete heart failure, or it may be only partially efficient, in which case the enfeebled circulation will affect unfavorably the function of other organs, such as the brain and the kidneys. The diminished activity of these organs will react again on the heart, thus establishing a vicious circle which ends in death. Prostatic obstruction in itself may augment the damage already present in the cardiovascular system. Pain, anxiety and loss of sleep impose on the heart a very real burden. Unquestionably the toxemia attendant on renal insufficiency has a deleterious effect on the heart muscle. O'Conor's [1] observation that, in 35 per cent of the cases of hypertension observed by him in patients with urinary obstruction, the blood pressure remained normal for from one to two years after operation suggests that urinary obstruction may sometimes be a cause of hypertension.

Other writers have called attention to the importance of the cardiovascular system in prostatic surgery. LeComte,[2] in an analysis of deaths following prostatectomy, found that of 196 fatalities twenty, approximately 10 per cent, were due to cardiac failure. Willius [3] studied the cardiac condition of 705 patients with prostatic hypertrophy at the Mayo Clinic, and found that 293 (42 per cent) had cardiovascular disease. I have made an investigation of the causes of death in a series of 150 prostatectomies done in my own private practice, with the results given in the accompanying table.

There were in all sixteen deaths; pneumonia or pulmonary infarct caused four; sepsis caused two; pyelonephritis, duodenal ulcer, cerebral hemorrhage and carcinomatosis caused one each; cardiac disease caused six. In at least two others the cardiovascular condition played a very important part. One man who died of pneumonia had a severe myocarditis; the man who died of cerebral hemorrhage had a blood pressure of 200 systolic and 115 diastolic.

*Chairman's address, read before the Section on Urology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 19, 1927.

1. O'Conor, V. J.: Further Observations on the Blood Pressure in Cases of Urinary Obstruction, J. Urology **10**: 135 (Aug.) 1923.
2. LeComte, R. M.: Statistical Study of Deaths Following Prostatectomy, Virginia M. Monthly **52**: 647 (Jan.) 1926.
3. Willius, F. A.: The Heart in Prostatic Hypertrophy, J. Urology **13**: 337 (March) 1925.

REPORT OF CASES

The essential facts in these six cardiac cases are as follows:

CASE 1.—A man, aged 64, was in apparently excellent condition, although he was much depressed by the death of his wife a month earlier. His heart was not noticeably enlarged and no murmurs were heard. The blood pressure was 160 systolic and 115 diastolic, and the renal function was excellent. He had a large vesical calculus and a large prostate, with very little residuum. March 15, 1925, under spinal anesthesia, the stone was removed and the prostate enucleated by a one stage suprapubic operation. After operation the pulse rate rose to 120, and remained between 100 and 110. There was persistent tympanites, in spite of forced fluids and hypodermoclysis. One week after operation, a pleural friction rub was heard above the right costal margin. The blood pressure fell to 110 systolic, 80 diastolic, and the pulse rate rose to 120 again. A medical consultant thought the cause of his collapse was cardiac failure. In spite of stimulation with caffeine sodiobenzoate, he died nine days after operation. Apparently he had a failing hypertensive heart, the failure of which was possibly augmented by a small pulmonary embolus.

Causes of Death

	Cases	Deaths	
Suprapubic prostatectomy, one stage	15	3	1. Lobar pneumonia 2. Hemorrhage from duodenal ulcer 3. Congestive heart failure 8 days after operation
Suprapubic prostatectomy, two stage	64	7	1. Pneumonia or infarct 2. Cerebral hemorrhage occurring while patient was on his way home from hospital 3. Sepsis, probably from phlebitis of iliac vein, 27 days after operation 4. Lobar pneumonia, 5 days after operation 5. Pyelonephritis, 6 weeks after operation 6. Coronary occlusion; death 3 weeks after operation 7. Arteriosclerotic and hypertensive cardiac failure 3 weeks after operation
Perineal prostatectomy for adenoma	50	2	1. Coronary disease with congestive cardiac failure 2 weeks after operation 2. Sepsis; phlegmon of perineum and groin
Perineal total prostatectomy for cancer	13	3	1. Carcinomatosis 3 months after operation 2. Sudden death due to cerebral hemorrhage or to coronary occlusion, 3 weeks after operation 3. Myocardial insufficiency plus emphysema and bronchitis
Perineal partial prostatectomy for cancer	8	1	1. Pulmonary embolus
	150	16	

CASE 2.—A man, aged 75, had used a catheter for three years, but the bladder had become so irritable that he was in constant torment. An intravenous phenolsulphonphthalein test gave 15 per cent the first hour and 20 per cent the second

hour. The heart was enlarged downward, with a systolic murmur over the aortic area. At the apex, the first sound was replaced by a murmur. The blood pressure was 120 systolic and 85 diastolic. March 9, 1923, under spinal anesthesia, cystoscopy showed an adenomatous prostate and three stones. Cystotomy was done at once, the stones were removed, and a suprapubic tube was left in the bladder. March 16, he complained of severe pain in the right lower anterior chest, more marked on deep inspiration. Over the entire precordia was heard a definite rub associated with the heart beat; on palpation a rough thrill could be felt. The diagnosis of pericarditis was made; an ice pack was applied, and the patient kept quiet with codeine. He did not have fever and the pulse rate was not above 100. The rub disappeared the next day, probably because of the development of an effusion. He was given digitalis, 34 grains (2.2 Gm.) of digitalis leaves being administered between March 16 and March 28. By March 30 his condition was much improved. The heart action was satisfactory; the blood pressure was 120 systolic and 75 diastolic. There were no signs of uremia. March 31, under light ether, enucleation was done. The patient did very well until April 20. On that day, while lying in bed, he suddenly died. I believe that this case was one of coronary infarct, which occurred just before and was the cause of the pericarditis. His death five weeks later was probably due to an extension of the thrombus, or to an embolus originating in the ventricle.

CASE 3.—An arteriosclerotic man, aged 82, had complete retention because of a malignant prostate. His family physician stated that he had had some heart-block. The blood pressure was 160 systolic; the renal function was good. Sept. 22, 1925, he was given sacral anesthesia, which was unsuccessful, so he was etherized and a total perineal prostatectomy done. He made a good immediate recovery, although five days after operation he developed a severe right epididymitis. He was very restless and slightly irrational at times, probably because of cerebral arteriosclerosis. October 13, he seemed in fair condition, although a rather labored respiration during sleep suggested cerebral anemia. The temperature had been normal, the pulse rate between 80 and 90. He had been sitting up every day, and while in a chair this day, he suddenly died. It was believed that his death was due to cerebral hemorrhage or to a coronary infarct.

CASE 4.—A man, aged 85, who entered the hospital, Aug. 22, 1925, with acute retention, one month before entrance had suffered a bad break in cardiac compensation with edema of the lungs and the legs. There was evidence of mitral regurgitation. Under treatment he regained his cardiac compensation so long as he was at rest. After he entered the hospital a soft rubber catheter was inserted with some difficulty, and the bladder was drained for ten days. The renal function was good. The catheter was then removed, but the patient could not void urine. Attempts to replace the catheter were unsuccessful, and the prostate bled profusely. Therefore a perineal prostatectomy under spinal anesthesia and scopolamine, 1/150 grain (0.4 mg.) was done. After operation there was Cheyne-Stokes respiration. The next morning the blood pressure was down to 90 systolic and 60 diastolic, but the patient did not appear very sick. He was given salt solution under the skin and caffeine sodiobenzoate. During the next twelve days he did well, but on September 23, following an attempt to sit up, he had severe dyspnea. He was seen by a medical consultant, who advised more complete rest. Twenty-four hours later the respiration became more labored, heart failure set in, and he died that night. The medical consultant stated that it was his impression that the sudden death was probably due to an embolus, although there was probably some sclerosis of the coronary vessels which may have accounted for it. This seemed to be a case of long standing angina and coronary disease with congestive failure one month before operation. His death may be put down as due to congestive failure.

CASE 5.—A man, aged 72, who entered the hospital, Aug. 12, 1920, had been treated at the Massachusetts General Hospital twenty years before for angina pectoris but recently had not had symptoms of cardiac failure. For ten years he had difficulty in voiding the urine. The heart appeared normal. The blood pressure was 180 systolic and 80 diastolic. The lungs showed many fine crackles in the bases. The bladder was overdistended. August 13, the bladder was opened under procaine hydrochloride anesthesia. August 27 he was seen by a medical consultant, who considered his heart to be in good enough condition to stand operation. August 30, under spinal anesthesia which worked excellently, a very large prostate was enucleated. Things went along fairly smoothly for three weeks, although the patient had developed a cough without expectorating. The temperature at times rose to 101, and he complained of pain in the left chest. The pulse rate was around 110. His heart began to fail, and he died twenty-four days after operation. He was put on digitalis only the day before he died, and I feel that if the impending heart failure had been detected earlier and the patient had been digitalized, a different result might have followed. He may be considered as having arterial and hypertensive congestive failure.

CASE 6.—A man, aged 76, active and in apparently good general health, entered the hospital, March 22, 1927. The blood pressure was 140 systolic and 80 diastolic. His heart was very slightly enlarged to the left, with a systolic murmur heard only at the apex. He gave no history of angina, dyspnea or edema. The lungs were clear, although he had had some cough for years. The phenolsulphonphthalein test gave 45 per cent in one hour after intravenous injection. Six months previous to entrance he had an attack of acute retention, but this had been relieved by catheter drainage, and he had been emptying his bladder except for 1 or 2 ounces of residuum. He complained of distressing frequency of urination. The prostate and vesicles were typically malignant on palpation, but cystoscopy did not show involvement of the bladder except that the trigon was somewhat elevated. The patient was given a series of high voltage roentgen-ray treatments two months before entrance, with little resulting change in the prostatic condition. I felt that total prostatectomy could be done with a reasonable hope of removing the growth. He was given 16 grains (1 Gm.) of digitalis leaves the day before operation. March 23, under ether, total perineal prostatectomy was done and apparently all the growth was removed. The operation took about two hours, which was longer than usual, but at the close the patient's blood pressure was 105 and he seemed in good condition. He was given an intravenous injection of saline solution. The next day the blood pressure was 135 systolic, 80 diastolic; the temperature, 102. He bled hardly any and drained clear urine. The second morning after operation he went into vasomotor collapse, the blood pressure falling to 80 systolic and 60 diastolic. The skin was mottled and cyanotic in places. Intravenous saline solution, with 15 grains (1 Gm.) of caffeine sodiobenzoate added, improved the circulation but did not raise the blood pressure more than five points. The administration of digitalis was begun and the patient was given 18 grains (1.16 Gm.) in two days and caffeine sodiobenzoate, 7½ grains (0.5 Gm.) every four hours. Under this stimulation, the third morning after operation, the blood pressure was 95 systolic, 55 diastolic, and his color much better. The lungs, however, were filling with coarse, sticky râles; the temperature remained normal and there was no evidence of consolidation. He was seen by a medical consultant, who thought that the râles were due to the bronchial secretion attendant on an old emphysematous condition and that the cardiac condition was primarily the cause of his collapse. By the fourth day after operation the lungs were so filled with secretion which he could not raise that his respiration was very labored. The blood pressure was 105 systolic, 60 diastolic, and the circulation seemed to be fairly good. He drained 28 ounces (828 cc.) of clear urine the preceding night. That day the pulse became weaker and he died in the afternoon. Undoubtedly the chronic pulmonary condition, the significance of which had not been realized before operation, was a factor in causing the cardiac failure, but it seems to me fair to attribute his death in the main to a myocardial insufficiency.

In addition to these fatal cases, a number of others showed evidences of more or less serious disturbance of the circulation at some time while in the hospital. One patient, whose heart became acutely dilated, was set straight again by venesection. In some cases cardiac crises developed rapidly; in others there was a gradual

development of cardiac insufficiency, the signs of which were a falling blood pressure, râles in the pulmonary bases, a rising pulse rate, and a diminishing output of urine.

NATURE OF THE TROUBLE

The heart lesion that causes trouble in prostatic patients is almost never of the valvular type. Endocarditis is a disease of youth, and if the resulting valvular deformities are not severe enough to prevent a man from reaching the age of prostatism, they are not likely to be an important factor at that time. The heart that gives trouble after prostatectomy is the heart whose muscle is injured either by chronic toxemia or by the deficient nutrition that is the result of coronary sclerosis. In my experience, the powerful, hypertrophied heart found in some cases of long-standing hypertension is not likely to fail. If the muscle of such a heart has deteriorated by reason of sclerosis of the coronary arteries, the heart has little reserve and will probably not stand the strain of operation. This condition cannot usually be detected by clinical examination alone.

The signs of impending failure in myocardial insufficiency are, naturally, those evidences of failure which we can detect. A falling blood pressure, a rising pulse rate, a weak, thready pulse, a soft, "mushy" quality to the heart sounds, possibly a new murmur, crepitant râles in the bases of the lungs—these signs mean that cardiac failure is imminent. The degeneration of the myocardium affects the regulatory mechanism of the heart by interfering with the impulses which normally pass from the sino-auricular node to the auriculoventricular node, and from that to the ventricles by way of the auriculoventricular bundle. If the control of the heart contraction normally exercised by the sino-auricular node is interfered with by degeneration of the conduction paths, the condition known as heart-block occurs. In cases of extensive degeneration of the conduction mechanism, the auricle fibrillates independently of the ventricular beat; the ventricles contract in an irregular way characteristic of this condition of "auricular fibrillation." The sudden onset of auricular fibrillation is accompanied by a decrease in the ability of the heart to perform its work, and is followed by more or less severe heart failure. The signs of this phenomenon, according to Mackenzie,[4] are breathlessness, inability of the patient to exert himself, and characteristic irregularity of the apex beat.

TREATMENT

From the practical point of view, it is interesting to learn what can be done to diminish both the morbidity and the mortality caused by heart disease in the prostatic patient. The first step lies in the estimation of the amount of cardiac reserve possessed by the patient. In the determination of this, the actual physical signs, except the presence of râles at the bases, appear to be of comparatively little value. A high blood pressure, an enlarged heart, cardiac murmurs, are not necessarily signs of cardiac weakness. The condition of the heart muscle is the one fact that must be ascertained; as an indication of this the past history of the patient and his statement as to how much he can do without causing distress are all important. Has he shown signs of cardiac failure, such as edema, dyspnea or angina? Has he noticed that effort causes distress? It is by finding out how his heart has been behaving that one can learn how it probably will behave.

The value of the electrocardiogram in prognosis has not yet been definitely fixed. Mackenzie[4] does not appear to regard it as essential. On the other hand, Willius[3] found that 49 per cent of the 293 patients with prostatic hypertrophy who also had cardiovascular disease showed significant abnormalities in their electrocardiograms. Phelps[5] found that 70 per cent of patients with retrosternal pain or a history of angina showed such abnormalities, even though the auscultatory observations were negative. Since it is desirable particularly to know the condition of the heart muscle, and since coronary sclerosis (a frequent cause of myocardial insufficiency) may be indicated by a special T wave peculiarity in the electrocardiogram, it would seem that patients whose history is at all suggestive of myocardial disease should be studied by this method.

The detection of inherent myocardial weakness does not necessarily prohibit prostatectomy. Many patients with marked cardiac disease are operated on successfully. The prospect of leading a catheter life or of wearing a permanent suprapubic drain may be less desirable than running the risk of an operation.

In order to carry the patient with potential heart failure safely through this period of stress, the surgeon should know all that can be known about his cardiac condition. He may be aided in the acquisition of this knowledge by a medical consultant, but in the final analysis he himself must be the one to decide on the time and method of operation and the choice of an anesthetic. Although the cardiologist understands the condition of the heart and can estimate the chances of cardiac failure, no one but the surgeon himself knows just what the demands on the heart may be. In the postoperative period, no one else will be in as constant and close contact with the patient, and the surgeon should be as keenly watchful of the condition of the circulatory system as of the conditions more directly associated with the operation.

In regard to the time of operation, so far as the cardiovascular system is concerned, the height of the blood pressure is an important criterion. O'Conor[1] has shown that the rapid emptying of the overdistended bladder is attended by a marked fall in blood pressure. If operation is done while the blood pressure is still falling, there will be a continued drop afterward. If, on the other hand, the bladder is emptied very slowly, the blood pressure will fall much less; and if operation is delayed until the blood pressure becomes stationary, there will be less postoperative fall. Since a rapid fall in blood pressure is followed by a decrease in urinary output, it is clear that this sequence is most undesirable.

The choice of an anesthetic is a matter of much importance from the cardiovascular point of view. In my experience gas-oxygen and ethylene produce peripheral congestion and labored respiration. I hesitate to employ these anesthetics in patients with high blood pressure. Spinal anesthesia, when it works well, is nothing short of marvelous; but in perhaps 10 or 15 per cent of the cases in which it is used the blood pressure will fall to such a degree that a condition analogous to that of shock is produced. This fall in blood pressure is caused by the paralyzing effect of the procaine hydrochloride on the splanchnic roots.[6] Even though the cardiovascular system recovers from this dangerous phase, the sudden demand on a myocardium potentially insufficient may initiate an acute car-

4. Mackenzie, James: Principles of Diagnosis and Treatment in Heart Affections, ed. 3.

5. Phelps, A. E.: Recognition and Management of the Cardiovascular Surgical Risk, J. A. M. A. **86**: 1824 (June 12) 1926.

6. Smith, G. G., and Porter, W. T.: Spinal Anesthesia in the Cat, Am. J. Physiol. **38**: 108 (July) 1915.

diac failure which will result in pulmonary congestion and consequent pneumonia. It may be that the use of ephedrine, as suggested by Ockerblad and Dillon,[6] will prevent this excessive fall in blood pressure. If so, the one great objection to spinal anesthesia will be removed. Sacral anesthesia in a great proportion of cases spares the heart, although I have seen two cases of collapse, alarming even though temporary, which I thought followed the injection of procaine hydrochloride directly into a vein. I have come to believe that a light, well given ether, if not prolonged more than forty-five minutes, is the most satisfactory anesthetic in most cases. Ether is a heart stimulant, and even in cases of marked cardiac disease it does no appreciable harm. I recollect one case of auricular fibrillation in a patient with cancer of the bladder who had been refused operation because of his cardiac condition, in whom etherization did not produce any appreciable ill effect. If etherization is not preceded by dehydration, and is followed by the administration of 1,000 cc. of salt solution beneath the skin, the kidneys will continue to function as long as the heart drives the blood through them with undiminished pressure.

Another decision that devolves on the surgeon has to do with the getting up of the patient after operation. I am well aware of the frequently repeated dictum that patients after prostatectomy must be got out of bed quickly or they will die of hypostatic pneumonia. In my experience this practice is unwise. I do not remember having seen any patient develop bronchopneumonia from lying in bed, whereas I am sure I have seen patients with poor hearts develop cardiac failure from the strain of being made to sit up too early. If one were treating these patients as if they had heart disease he would not think of putting them through such an ordeal, and I fail to see why the fact that they have had their prostates removed alters the situation.

In the management of the cardiac risk in prostatic surgery, the therapeutic aspect is important. It is not my intention to deliver a lecture on this topic, but to record briefly some of the conclusions to which I have been led. The value of digitalis lies chiefly in its power to lessen the excitability of the auriculoventricular node (Mackenzie), thereby slowing the rate at which the ventricle is contracting. When beating at a slower rate the heart contracts more effectively, and these changes not only cause it to pump more efficiently but improve the nutrition of the heart muscle as well. Disturbance of the cardiac rhythm of the type that indicates auricular fibrillation furnishes the strongest reason for the use of digitalis. In fibrillation the drug should be given in large doses—a grain and a half (1 Gm.) to every 10 pounds (4.5 Kg.) of body weight administered within twenty-four hours—to digitalize the patient as rapidly as possible. Usually from 22 to 28 grains (1.4 to 1.8 Gm.) will produce this effect, which will be manifested by a fall in the pulse rate and improvement in the general condition. Whether small doses of digitalis given over a considerable period of time exert any beneficial effect on the heart muscle is a matter of conjecture. Many excellent clinicians believe that some benefit follows this method of administration. The use of morphine in small doses, such as one-eighth grain (8 mg.) hypodermically, is not to be forgotten. These patients require rest, both mental and physical, and a good night will work wonders. That morphine improves the action of the heart is generally accepted.

In sudden collapse of the circulatory system, accompanied by diminished urinary output, torpor and pulmonary stasis, intramuscular injections of caffeine sodiobenzoate in 7½ to 15 grain (0.5 to 1 Gm.) doses, repeated several times at four hourly intervals, have appeared to be of great value. The patient comes to life, as it were, and all his vital functions are speeded up.

Salt solution and dextrose solution given intravenously, as well as transfusion, are valuable in postoperative circulatory crises. Occasionally venesection is indicated, as in acute cardiac dilatation.

With these simple forms of cardiac therapy the urologist should be familiar. A medical consultant is not always at hand; even if he is, it is desirable that the surgeon should be able to cooperate with him intelligently.

CONCLUSIONS

1. In a personal series of 150 prostatectomies there were sixteen deaths. Of these, six were due directly to cardiac failure, and in two more the cardiac condition was a contributory cause.

2. The condition of the myocardium and its arteries is the important factor in the behavior of the heart during and after prostatectomy.

3. In the selection of the time and method of operation and the type of anesthesia, the surgeon must attach even greater weight to the condition of the cardiovascular system than to the condition of the kidneys.

4. The surgeon must understand the essentials of cardiac physiology and therapy if he would give his patients who undergo prostatectomy the best chance to survive.

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6. Ockerblad, N. F., and Dillon, T. G.: Ephedrine in Spinal Anesthesia, J. A. M. A. 88: 1135 (April 9) 1927.

PREVENTION OF ANOREXIA IN CHILDREN *

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Before outlining the method of preventing poor appetites, to be presented here, I should like to mention the thoughts that suggested its use. In the first place, lack of appetite was so common a condition and its results so disastrous to the physical and mental welfare of many children that I became interested in its treatment and prevention. In treating other abnormalities, it has been customary to begin with a study of normal function, but in the matter of hunger and appetite our textbooks, until recently, have afforded little information. One gathers from this lack of attention to the subject that eating has been assumed to be instinctive. Perhaps some of our difficulties in the management of anorexia have been due to this vague conception of the eating mechanism.

Since hunger and appetite are the main stimuli to eating, it is worth while to investigate their nature. According to Webster's dictionary, hunger is a painful sensation due to lack of food, while appetite is a desire for gratification. Carlson [1] widens our knowledge as to their nature. Hunger, a purely physiologic function, is due to vigorous contractions of the empty stomach. Appetite, however, is a much more complex mental

* Read before the Section on Diseases of Children at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

1. Carlson, A. J.: The Control of Hunger in Health and Disease, Chicago, University of Chicago Press, 1916.

process, dependent on pleasant memories of feelings, tastes, odors and sights. Hunger merely brings into consciousness the fact that we need food, whereas appetite transforms this sensation into a desire to eat. Hunger is appeased by the first few mouthfuls ingested, but appetite continues to urge us to eat throughout many courses. Not only does appetite control the amount of food eaten, but also it aids in digestion through its stimulation of salivary and gastric secretions.

This cursory consideration of the attributes of hunger and appetite led me to think that we eat because of the following hypothetic reflex or mechanism: When the stomach is empty, contractions occurring in its wall give rise to uncomfortable sensations interpreted as hunger. Since food has previously afforded relief from this sensation, consciousness of its need is thereby aroused. Then we begin to think of different kinds of food; of where, when and how we are to get our next meal. This is appetite, under the stimulus of which salivary and digestive juices begin to flow. When we sit down to eat, appetite urges us on to take our fill, long after the pangs of hunger have ceased, until satiety, by some unknown mechanism, stops our desire for food. Completed digestion and emptying of the stomach stimulates hunger waves and the process is repeated.

Such a conception of the mechanism of eating brings into relief many important points which are useful in any consideration of anorexia. Space does not permit me to do more than mention these questions.[2] Hunger and appetite are different, and may be treated separately by different methods. Physiologic stimuli will, in all probability, most affect hunger. Psychologic influences will probably be more important in developing good appetite, which insures adequate intake of food. Good appetite is, therefore, an important end in itself. What are the physiologic and psychologic factors most important in maintaining these two stimuli normally active? Obviously, to prevent anorexia, one must do the things which aid in maintaining their activity and avoid those which inhibit them.

The prophylactic technic here described is an attempt to fulfil these requirements. It does not contain any new elements. Many of these methods have been frequently mentioned by various writers. Brennemann[3] recently emphasized many of the points. Only in the chronological arrangement and in the report of results is this paper original. Six years ago I began to apply the embryo of this plan to all the infants with whom I came in contact. It has been gradually expanded into the technic here described. It will be noted that most of the methods were important from the psychic standpoint.

TECHNIC

1. *Propaganda.*—Mothers and nurses were instructed as to the nature of anorexia while their babies were young, at 2 or 3 months of age. They were emphatically told never to urge their children to eat except under express orders, and were asked to report refusal just as they would report vomiting or loose stools. This resulted in my being able to combat anorexia before it had become chronic. Prophylaxis thus had a chance.

2. *Treatment of the First Attack.*—This always consisted in a reduction of food. It should be taught that anorexia is usually the first symptom of infection and that it precedes all other signs of the common cold. Therefore, when a baby first refused its bottle the mother was told to reduce the feedings and to look out for an illness. I now consider this the most important part of prophylaxis. Many instances occur in which chronic anorexia dates from the onset of an ordinary cold. Instead of reducing the diet, mothers frequently become determined in their efforts to force feedings, and from this unpleasant struggle over the bottle at a time when the child is physically not fit to eat, aversion for food on a psychologic basis develops. He first associates unpleasantness with food. Appetite is menaced. If left alone with the appetite as a guide, the baby in a few days would become hungry and make up for lost time; but, forced to eat, psychologic aversion dulls the returning appetite and the basis for a prolonged illness is established.

3. *Prevention of Weaning Difficulties.*—Since it was soon found that many cases had their beginning at this period, prevention of weaning difficulties became important. To this end, all babies were given an occasional bottle from birth, often enough so that they remembered the bottle as a friend. This practically eliminated difficulty in getting babies to take bottle food.

4. *Prevention of Trouble Due to Changes in the Character of Food.*—Since it was often difficult to get babies to make such marked changes as from cereal to vegetable, these variations were made gradually and mothers were instructed not to force new food on them. Cod liver oil and orange juice were given from the first few weeks of life to avoid later struggles.

5. *The Avoidance of Overfeeding.*—All babies were put on the minimal diet which would cause a satisfactory gain in weight. If such a gain was being made, no increase in formula was allowed simply because the baby seemed hungry. This part of the routine involved considerable education of parents, because what seemed satisfactory to me did not always appear so to them. The neighborhood baby race is a great obstacle to conservative pediatrics.

6. *Not Prescribing Definite Amounts of Food after One Year.*—After the first year, diet lists were given but parents were told to allow the child's appetite to be the sole judge as to the amount of food to be taken. No caloric diets were prescribed. By this method it was hoped to prevent psychologic aversion due to forced feeding in older children.

7. *Management of the Meal.*—Mothers were told to leave their children alone at mealtime as much as possible and not to talk about eating. They were told to try to develop a detached attitude toward the child at mealtime and never to force food.

8. *Allowing the Child's Appetite Play in Choice of Food.*—In the main the child was humored in this regard. This is not to be interpreted that he ate anything he pleased, but that when there was a choice between two equivalent foods, the one he liked best was most often given. It was not considered advisable to "make the child eat everything so that later on he would like everything." In my experience this is more likely to mean that the child will not enjoy eating anything because the repetition of struggles that result from insisting on especially disliked food tends to produce psychologic distaste for all food.

9. *Avoidance of Emotional Stress at Meals.*—Parents were instructed that nothing could be worse for appetites than pitched battles over meals. Unpleasant subjects were not to be brought up at such times.

10. *Reading of Psychologic Works.*—When the child was about 1 year of age, all parents were asked to begin

2. Aldrich, C. A.: Cultivating the Child's Appetite, New York, Macmillan Company, 1927.
3. Brennemann, Joseph: Some Neglected Practical Points in the Technic of Infant Feeding, Arch. Pediat. 40: 359 (June 19) 1923.

reading books on child psychology, and a list of some of these was recommended. In this way I hoped to be able to educate parents to see troubles early when prevention could be used.

11. *Nourishment Between Meals.*—This was not advised for any child.

QUESTIONNAIRE

The report of the results of this technic is based on the statistics gleaned from a questionnaire sent to the mothers of 215 consecutive children over 18 months of age. In selecting these cases I simply went through the files and took the first 215 histories of children whom I had seen from birth until the present time. No exceptions were made on account of chronic or acute disease of any sort. It was hoped that this might show whether or not it paid in appetites to take the trouble to go through the previously outlined routine. The following questions were asked:

1. Does your child usually eat:
   (*a*) Hungrily?
   (*b*) Willingly?
   (*c*) Reluctantly?
   (*d*) With aversion for food?
2. What is the approximate weight with clothes on?
3. What is the age in years and months?

RESULTS

Of the 215 letters sent out, 199 were returned. In assembling the results it has seemed best to present them in the form of three tables, one a summary of the entire group, one a detail of those underweight, and another a detail of those who ate reluctantly. In the subsequent discussion it will be taken for granted that the children who ate hungrily or willingly do not present an appetite problem. It was gratifying that none were said to have aversion for food and that none habitually vomited meals.

Statistics as to the prevalence of anorexia are few in spite of its widespread occurrence. Studies made by Maclay [4] and Mosely [5] in the Department of Home Economics of the University of Chicago, however, offer some basis for comparison. The children examined in these researches were of preschool age and were from approximately the same type of homes as are those reported here. Among 100 children, Miss Mosely found only nineteen who were good eaters.

TABLE 1.—*Results in the Entire Group*

Age Period	Number of Cases	Hungrily	Willingly	Reluctantly	Aversion	Number Underweight	Average Pounds Overweight
18 mo.–2 yrs..	43	19	21	3	0	1	3.8
2–3 years....	56	18	29	9	0	2	3.8
3–4 years....	43	16	22	5	0	3	3.7
4–5 years....	33	6	18	9	0	8	3.0
5–6 years....	24	12	8	4	0	7	3.7
Totals....	199	71	98	30	0	21	
Per cent (approx.)		35.5	49	15	0	10	3.61 lbs.

Consideration of these statistics must take into account the possibility that some parents, discouraged by failure, may have sought other advice, in which event this report would comprise most of the successes and leave out some of the failures. Furthermore, there is no way of telling how these children were actually treated. Judgment of results must be based on a consideration of what was told the parents, rather than on what may be assumed to have been done for the child. If it can be shown that children whose parents are not so instructed have poorer appetites than those reported here, then some prophylactic merit may be claimed in the technic.

Table 1 summarizes all the replies according to the different age periods. There were more reluctant eaters above 2 years of age. The entire group averaged 3.6 pounds (1.7 Kg.) overweight for age. It would have been more satisfactory to include in the questionnaire a query as to the height, but I felt that with so large a number the height would probably be about average. If I had anticipated that these children would average so much overweight, the height question would certainly have been added. This table demonstrates that it is safe for the pediatrician to advise strongly against forced feeding, provided he applies such measures as have been outlined.

TABLE 2.—*Underweight Children*

Case Number	Pounds Underweight	Appetite*	Comment
19	1	R	Congenital heart disease
51	1	H	Premature baby
63	3	R	
120	3	R	Recurrent vomiting
125	2	W	
139	3	H	Premature baby
146	2	W	
148	2	H	
152	3	R	Celiac disease
158	3	W	
163	2	W	Chronic pyelitis
167	5	R	Chronic pyelitis
168	2	W	Chronic pyelitis
173	1	W	
180	6	W	Chronic tonsillitis with hypertrophy
187	3	R	Chronic tonsillitis with hypertrophy
191	1	R	
192	1	R	
195	6	R	Chronic tonsillitis with hypertrophy
197	4	H	
198	4	W	

* In this column, H, R and W signify that the respective child ate hungrily, reluctantly or willingly.

Table 2 summarizes the statistics obtained for the underweight children. Of these twenty-one children, thirteen were less than 10 per cent underweight, and in eleven of them there was an adequate physical cause for the nutritional condition. Closer study showed that of the children free from physical disease, only three were more than 1 pound (0.5 Kg.) underweight for their height (cases 125, 146, 158), and that these children all ate willingly. The table indicates that in the entire group of 199 children there were none seriously underweight because of poor appetite alone.

In table 3 are summarized the data recorded for the reluctant eaters, the failures in this attempt to produce good appetites. Of the thirty children, nine had physical causes which may reasonably explain the anorexia. Of the remaining twenty-one, only three were underweight for age (cases 63, 191, 192). Two of these were only a pound underweight, and the other was overweight for height and quite plump. It is evident that among these poor eaters the difficulty has not reached proportions severe enough to produce malnutrition in any case.

Investigation as to the cause of failures was illuminating. In the first place I found to my surprise that several mothers had never heard of the problem and had gone on forcing down food because they thought "of course it was the proper thing to do." In spite of good intentions, my work was imperfectly done. On the other hand, there were parents who did not follow instructions. Some undoubtedly tried to leave their children alone at meals but just couldn't do it. Many parents are so constituted that they have to see to it that what their children do is done because they super-

4. Maclay, Eleanor: A Study of the Prevalence of Lack of Appetite in One Hundred Preschool Children, Chicago, August, 1924.
5. Mosely, Marion R.: Reaction to Food of Children of Preschool Age, Chicago, June, 1925.

vise it. They need a lot of education. In many instances I did not "sell" my ideas strongly enough. Popularization of the subject would have helped in these instances. The bogey of malnutrition has been so strongly upheld and the advantages of proper feeding so admirably demonstrated that many parents lack perspective and reason when it comes to a consideration of *how* their children eat. In this community, as in many others, the enlightened were dominated by the idea that children

TABLE 3.—*The Reluctant Eaters*

Case Number	Age	Pounds Underweight	Pounds Overweight	Comment
19	1	1	.	Congenital heart disease
24	1	.	1	
42	1	.	1	
49	2	.	6	
52	2	.	3	
56	2	.	2	
57	2	.	2	
63	2	3	.	
70	2	.	3	
86	2	.	2	
90	2	.	5	
91	2	.	5	
106	3	.	4	
115	3	0	0	
120	3	3	.	Recurrent vomiting
138	3	0	0	
139	3	0	0	Chronic pyelitis
142	4	.	9	
144	4	.	2	
151	4	.	2	
152	4	3	.	Celiac disease
154	4	0	0	
156	4	.	5	
164	4	0	0	Congenital spastic paralysis
167	4	5	.	Pyelitis
170	4	.	3	Chronic tonsillitis with hypertrophy
187	5	.	3	Chronic tonsillitis with hypertrophy
191	5	1	.	
192	6	1	.	
195	6	6	.	Chronic tonsillitis with hypertrophy

must eat definite, set formulas prescribed by the physician, nurse, government health bulletin or what not. Therefore, instilling the ideas here presented was particularly difficult. It was hard to make parents understand that my advice was prompted by a desire that proper food should be eaten, and was not given because I did not care what they ate. The aid of propaganda is evidently necessary for complete success.

In meeting the widespread anorexia revolt now being staged by children, we must squarely face this issue: Are we to insist that children eat certain prescribed amounts of food in an effort to make them all attain prescribed statural goals, or are we to make an intelligent effort to develop appetites so that each child will voluntarily eat sufficient food to insure his own best development?

SUMMARY

1. Good appetite is an important end in itself for which to strive.

2. A hypothetic natural hunger-appetite mechanism or reflex controlling eating is outlined.

3. It is possible, by following a prophylactic technic, to prevent interference with this normal reflex.

4. The results of such prophylactic treatment, as shown by statistics obtained in 199 consecutive cases, demonstrate that (*a*) in this series it was not harmful to the nutrition of the children to advise strongly against forced feeding, as the group averaged 3.6 pounds above weight for age, and (*b*) there were no children in this group who were malnourished except those suffering from physical disease.

5. It is necessary in order to combat successfully the condition of chronic anorexia that propaganda as to the proper technic of presenting food be broadcast.

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THE MALNOURISHED CHILD

AN INDIVIDUAL, INTENSIVE METHOD OF TREATMENT *

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Malnourished children constitute that great heterogeneous group who are appreciably (10 or more per cent) below weight for height and age. Every country, race and stratum of society has its quota of such children. The more carefully each underweight child is studied, however, the more convincing is the evidence that the condition is usually due to a limited number of causes, and that its correction and prevention are closely associated with the two fundamental requisites for growth—proper food and ample rest. Excellent treatises by Smith,[1] Emerson [2] and Kaiser [3] show what can be accomplished by the class or group method of treatment, now used more or less extensively in clinics, schools and outpatient departments. I shall attempt to give a brief outline of a simple, intensive, individual method of treatment for the malnourished child brought to the physician's office. It has been used in several hundred instances during the last five years. The best and most permanent results have been obtained in malnourished school children with: (1) insufficient food or rest; (2) tuberculosis of the lymph glands, the pleura or the bones and joints; (3) anorexia, the result of a nervous environment; (4) goiter with or without increased metabolic rate; (5) secondary anemia. The method has not been used in underweight children with any disease of the heart, blood, urinary system or gastrointestinal tract, including acidosis and diabetes, as such children usually require other special diets and treatments.

Five-Meal Diet

7 a. m.: Two ounces of orange juice, apple sauce or a ripe banana, or five stewed prunes and 2 ounces of cream. Cereal cooked in top milk or a breakfast food and 4 ounces of cream, or 8 ounces of weak cocoa or top milk with well buttered rye or whole wheat bread, toast or rolls with honey, jelly or jam.

10 a. m.: Two well buttered lettuce sandwiches with chopped egg, cheese or lean meat and 6 ounces of milk.

12 to 1: Creamed vegetable soup; liver, beef, mutton, chicken, or fish finely cut; rice or potato purée with gravy or butter; salad (lettuce or celery), dessert or fruit.

4 p. m.: Six ounces of boiled top milk (flavored) and three or four pieces of zwieback, or 6 ounces of junket with crackers, or ripe banana with cream.

7 p. m.: Meat, green vegetables, well buttered toast or zwieback, 6 ounces of rich, boiled milk. Stewed fruit, figs, dates or nuts.

9 p. m.: From 6 to 8 ounces of boiled top milk, eggnogg or chocolate malted milk.

The importance of a properly adjusted diet, ample rest and restricted daily routine are seldom sufficiently emphasized in the treatment and cure of various otherwise chronic or progressive ailments. Czerny [4] and

* Read before the Section on Diseases of Children at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

1. Smith, C. H.: Methods Used in a Class for Undernourished Children, Am. J. Dis. Child. **15**: 373 (June) 1918.
2. Emerson, W. R. P.: A Nutrition Clinic in a Public School, Am. J. Dis. Child. **17**: 251 (April) 1919.
3. Kaiser, A. D.; Norton, H. J., and Walker, Edith M.: The Value of Nutrition Classes to the Undernourished Child, Am. J. Dis. Child. **31**: 386 (March) 1926.
4. Czerny, A.: Arch. f. Kinderh. **60**: 242, 1913.

Pirquet [5] advocate the use of a five-meal diet in their treatment of tuberculosis, but neither stresses the importance of a diet rich in vitamins (green vegetables, raw fruits, milk, cream and butter). The special five-meal diet used by me during the past few years is given on the preceding page.

PROCEDURE

A complete physical examination (including blood, urine and stool analyses) is made after the family and personal histories of the patient are obtained. A cutaneous tuberculin test is made and the mother is instructed to return in two days with the child and a two-day record, including the caloric value of the food eaten, time and duration of each meal, hours of rising, rest and retiring, play and other activities. If the tuberculin test is positive, a roentgen-ray examination of the chest is made. Children with fever and extreme anorexia, or if much more than 10 per cent below the average weight, are kept in bed during the first few weeks. Afebrile children who are 10 or more per cent underweight for height and age are put on a regimen which has the following points in common:

1. Breakfast and supper are given in bed.
2. Three main meals (at 7 a. m., noon and 7 p. m.) and two lunches (at 10 a. m. and 4 p. m.) are given.
3. No food and very little water are allowed between meals.
4. The main meal, given at noon, is followed by a one and one-half to two hour rest period, if there is no school attendance.
5. The value of the food eaten should at first equal 40 calories per pound of actual weight; this must then be increased gradually as the age, digestive capacity and appetite permit, until the intake approximates 40 calories per pound of theoretical weight for the height and age.
6. Most of the milk is given at the lunches and at bedtime.

After the diagnosis is made, the mother is told the underlying cause and that it will probably require about three months of constant attention and effort to bring the weight up to the average. It is essential that the person in charge of the child keep an accurate record of the amount of food eaten daily for two or more days each week. A special notebook, containing a list of 100 calory portions of the more common foods, is a great convenience (table 1). The child should be weighed weekly or semimonthly. These notes should include the hours of arising, sleep, play, school and other activities, and should be sent to the physician fortnightly. Such reports should be critically examined, and promptly returned with comments or supplemental instructions. It is essential that the patient and mother or nurse cooperate with the physician throughout the entire period of intensive feeding. If there is no progress, or if the underlying condition warrants it, the patient should be seen oftener than once a month. Patients with fever, especially if it is due to pleurisy, bone or pulmonary tuberculosis, should remain in bed, preferably in the hospital, until there is unquestionable improvement. They may then be allowed up increasing lengths of time. Children not confined to bed should indulge in the proper kind of exercise and play. Fresh air and sunshine aid appetite and assimilation. Deep breathing exercises each morning and evening, sun baths on warm days, and sleeping in cold rooms should be encouraged. All underweight children should be in bed at least from 7 p. m. to 7 a. m. Breakfast and supper in bed help conserve energy. An afternoon nap or rest period at least on Saturdays, Sundays, holidays and during vacation is of value for those who fatigue easily and gain slowly. Such children should be up only ten or fewer hours each day.

TABLE 1.—*One Hundred Calory Portions (Approximate)*

Breads
Corn, 1½ inches square
Brown, 1 medium slice
Graham, 1 medium slice
Coffee cake, 1 small slice
Muffin, 1 small
Plain rolls, 1
Raisin, 1 small slice
Rye, 2 small slices
Sweet rolls, 1 small
Wheat, 1 large slice
Zwieback, 3 pieces

Broths and Beef Juice
Beef broth, 8 ounces
Chicken broth, 8 ounces
Mutton broth, 8 ounces
Beef juice, 5 ounces

Cereals (cooked)
Barley, 6 tablespoonfuls liberal
Bran, 8 tablespoonfuls lib.
Cornmeal, 6 tablespoonfuls lib.
Cream of wheat, 6 tablespoonfuls lib.
Farina, 6 tablespoonfuls lib.
Hominy, 7 tablespoonfuls lib.
Oatmeal, 7 tablespoonfuls lib.
Pettijohn's, 7 tablespoonfuls lib.
Ralston's, 6 tablespoonfuls lib.
Rice, 6 tablespoonfuls lib.
Wheatena, 6 tablespoonfuls lib.

Cereals (dry)
Cornflakes, 10 tablespoonfuls
Grapenuts, 3 tablespoonfuls lib.
Puffed rice, 10 tablespoonfuls lib.
Puffed wheat, 10 tablespoonfuls lib.
Shredded wheat, 1 biscuit

Cheese
American, 1½ cubic inches
Cottage, 4 tablespoonfuls
Cream, 1½ cubic inches

Crackers
Animal crackers, 10
Graham, 3
Oatmeal, 3
Oyster, 20
Saltines, 3
Soda, 4

Desserts
Apple tapioca, 3 tablespoonfuls lib.
Bread pudding, 3 tablespoonfuls lib.
Cake (sponge or angel food), 1½ inch square
Chocolate eclairs, 1 small
Cookies, 2 medium
Cornstarch, 2 tablespoonfuls lib.
Custards, 2 tablespoonfuls lib.
Doughnuts, 1 small
Gelatin, 4 tablespoonfuls level (dry)
Gingerbread, 1½ inch square
Ice cream, 2 tablespoonfuls lib.
Jello, 3 tablespoonfuls level (dry)
Junket, 4 tablespoonfuls
Lady fingers, 2
Macaroons, 1
Nabiscoes, 6
Jelly, 1 tablespoonful
Marmalade, 1 tablespoonful

Eggs
Eggs, 1
Yolks, 1¼
Whites, 5

Fats
Butter, 1 pat (1 tablespoonful)
Lard, 1 tablespoonful, level
Olive oil, 1 tablespoonful

Fish
Halibut, equivalent of 2 med. chops
Oysters, 12
Salmon, equivalent of 2 med. chops
White, equivalent of 2 med. chops

Flour
Barley, 2 tablespoonfuls, level
Graham, 3 tablespoonfuls, level
Rice, 2 tablespoonfuls, level
Rye, 3 tablespoonfuls, level
Wheat, 3 tablespoonfuls, level

Fruit
Apricots, 5 tablespoonfuls lib.
Apples, 1 large
Apple sauce, 3 tablespoonfuls lib.

Fruit—Continued
Banana, 1 medium
Cantaloup, ½ medium
Cherries, 4 tablespoonfuls lib.
Dates, 3 large
Figs, 2 large
Grape fruit, ½ medium
Grapes, Concord, 25; California, 12
Oranges, 1 medium
Peaches, 2 medium
Pear, 1 large
Pineapple, 1 medium slice
Plums, 3 tablespoonfuls lib.
Prunes, 4 medium size
Raisins, 40
Raspberries, 3 tablespoonfuls
Strawberries, 10 tablespoonfuls

Fruit Juices
Grape, 2½ ounces
Lemon, 6 ounces
Loganberry, 2½ ounces
Orange, 6 ounces
Prune, 5 ounces
Raspberry, 7 ounces
Strawberry, 12 ounces

Meat
Bacon, 1 strip (not crisp)
Beefsteak, equivalent of 1 med. chop
Chicken, equivalent of 2 med. chops
Ham, equivalent of ½ chop
Lamb chop, 1 medium
Mutton chop, 1 medium
Dried beef, 4 tablespoonfuls

Milk
Buttermilk, 9 ounces
Cream, 2 ounces
Skimmed milk, 10 ounces
Whole milk, 5 ounces
Protein milk, 3 tablespoonfuls

Nuts
Almonds, 10
Hickory, 2 tablespoonfuls
Peanuts, 12
Pecans, 10
Walnuts (English), 10

Soups
Cream vegetable soups, 4 ounces
Thick vegetable soups, 5 ounces
Clear soups, 20 ounces

Sugars
Dextrin-maltose, 2 tablespoonfuls, level
Granulated, 4 teaspoonfuls, level
Milk sugar, 5 teaspoonfuls, level
Malted milk, 2 tablespoonfuls, level

Syrups
Ordinary table (including Karo), 1½ tablespoonfuls
Maple, 1 tablespoonful
Honey, 1 tablespoonful
Brown sugar, 1 tablespoonful

Vegetables
Asparagus, 8 tablespoonfuls lib.
Beans (green), 8 tablespoonfuls lib.
Beans (lima), 4 tablespoonfuls
Beans (baked), 3 tablespoonfuls lib.
Beets, 8 tablespoonfuls lib.
Carrots, 6 tablespoonfuls lib.
Cauliflower, 13 tablespoonfuls (creamed)
Celery, 6 stalks
Corn, 4 tablespoonfuls lib. (creamed)
Lettuce, 3 medium sized heads
Onions, 8 tablespoonfuls lib.
Parsnips, 7 tablespoonfuls lib.
Peas, 5 tablespoonfuls lib.
Potato, Irish
Baked, 1 medium
Mashed, 3 tablespoonfuls lib.
Creamed, 3 tablespoonfuls lib.
Potato, sweet, 1 small
Rhubarb, 15 tablespoonfuls lib.
Spinach, 6 tablespoonfuls lib.
Squash, 8 tablespoonfuls lib.
Tomatoes, 10 tablespoonfuls lib.
Turnips, 6 tablespoonfuls lib. (creamed)

Miscellaneous
Cocoa, 3 tablespoonfuls (uncooked)
Chocolate, ½ square
Macaroni, 4 tablespoonfuls (cooked)
Olives, 10 medium size
Peanut butter, 1 tablespoonful

A child with anorexia may require exceptional care during the first few weeks of treatment. If the appetite is extremely poor, he should be kept in bed until

5. Pirquet, Clemens: Pirquet System of Nutrition, Philadelphia, W. B. Saunders Company, 1922.

there is a very definite improvement. Possibly at first only three meals should be given in twenty-four hours (7 a. m., noon and 7 p. m.). All sweets and the amount of drinking water should be curtailed. No ice-cold foods should be given. Constipation must be overcome. A copious evacuation shortly after breakfast is imperative. The food should be concentrated and, if necessary, forced. Occasional vomiting is no contraindication, if it does not provoke acidosis or diarrhea. The child should not see all the food he is expected to eat. The essentials (green vegetables, raw fruit, egg, meat and cereals cooked in milk) should be given first. Flavored puddings made of milk powder or a paste made of sweetened cottage cheese, powdered lactic acid milk

TABLE 2.—*Results of Intensive Feeding in Underweight Children*

	Name	Age, Years	Height, Inches	Weight, Pounds	Pounds Below	Daily Calories Before	Average Calories During First Month of Treatment	Gain in 1st Mo., Pounds	Gain in 2nd Mo., Pounds	Gain in 3rd Mo., Pounds	Total Gain in 3 Mos., Pounds	Diagnosis	Treatment Besides Special Five Meal Diet
1	Robert B....	5	41	33⅛	6	1,000	1,400	5	1½	3½	10	Anorexia; anemia; faulty food habits; insufficient sleep	Forced feeding; bed ten days; green vegetables; 1 quart of milk
2	Bradley T...	5	43	33¼	8¾	900	1,600	5	2¾	2¼	10	Late rickets; anemia; rachitic deformed chest	Forced feeding; heliotherapy; up only six or eight hours
3	Jean H.....	5⅛	40	32	4	1,200	1,600	4	1	1½	6½	Tuberculosis of bronchial glands; right apex and Pott's disease	Extension; 2½ years; heliotherapy; cod liver oil; gained 16 pounds in two years
4	Charles B....	5⅛	43	33½	9½	1,400	2,000	2½	2	3	7½	Tuberculosis of bronchial gland; celiac disease; acidosis	Bed six weeks, then up six hours daily; protein milk, meat, eggs; gained 15 pounds in twelve months
5	Frank S.....	5½	46	41	7	1,400	1,700	4½	1	1¾	7¼	Stationary weight, 1½ years; late rickets; faulty food habits	Forced feeding; cod liver oil; heliotherapy
6	Leonard P...	6¼	50	50 1/16	7	1,800	2,400	2	2¾	3¾	8½	Asthenia; anemia; goiter; insomnia	Forced feeding; compound solution of iodine; heliotherapy; bed two weeks, then up only eight hours daily
7	Louis Z.....	7¼	51	53	7	2,000	2,400	1⅝	6	1⅛	8¾	Asthenia; anorexia; goiter	Breakfast and supper in bed for two months; compound solution of iodine daily for six weeks
8	Margaret A.	7¼	52	48⅝	13⅝	1,700	2,500	4⅝	7	4¾	16⅜	Tuberculosis (pleurisy with effusion); anemia; asthenia	Thoracocentesis; 300 cc. fluid; bed six weeks then up six or eight hours; cod liver oil and creosote
9	John C.....	7¾	48	45	9	1,800	2,200	6½	2	¾	9¼	Tuberculosis (pleurisy with effusion); anemia	Thoracocentesis; 200 cc. fluid; bed two and one-half months; cod liver oil and creosote
10	Charles W....	7¾	52	53⅛	9⅞	1,600	2,200	2	5½	2½	10	Asthenia; faulty food habits; up too late	Breakfast and supper in bed for two months; two hour noon nap
11	Raymond R.	8	50	50	9	1,700	2,400	4⅛	5	2	11⅛	Chronic bronchitis; goiter	Breakfast and supper in bed; two hour noon nap
12	Jane P.....	8½	53	51	13	1,200	2,200	7½	2½	2	12	Faulty food habits; no milk for four years	Gradually increasing quantities of milk and cream
13	Wayne W....	8¾	53	61	6	1,600	2,200	4¼	3¾	1½	9½	Pirquet positive; goiter; faulty diet; up too late	Breakfast and supper in bed for six weeks; compound solution of iodine
14	Mary H.....	9	54	60¼	9¼	1,600	2,800	8¼	9/16	¾	9 3/16	Pirquet positive; asthenia; anorexia; old mitral murmur; goiter	Bed two weeks, then up eight hours; two drops compound solution of iodine daily for two months
15	John S.....	9½	56	60⅞	16⅛	2,000	2,600	3⅛	2½	2½	8⅛	Tuberculosis spondylitis (cervical); bronchial glands enlarged; asthenia	Extension three months, then cast; bed 3 months longer, then up four hours daily
16	Katherine A.	9¾	57	75¼	6	900	3,000	8	0	0	8	Anorexia; pyorrhea; teeth loose; only two meals daily; tardy rickets	Breakfast and supper in bed; cod liver oil; heliotherapy
17	Howard S...	9¾	53	56	12	1,400	2,600	2½	3¼	2	8¼	Anorexia; faulty food habits; up too late	Forced feeding; up ten hours
18	Doris C.....	10¼	55	58⅜	14⅝	2,200	3,000	6⅜	1½	1½	9⅜	Pirquet positive; goiter; bronchial glands enlarged	Bed one month; then school one half day; then breakfast and supper in bed two months
19	Ralph S.....	10¾	54	63 1/16	8 15/16	1,100	2,600	2¾	5½	2	10¼	Faulty food habits; up too late; enuresis	Diet regulation; up only eight hours daily
20	Edgar H....	11	54	65½	6⅞	2,300	2,800	4	3½	3⅜	10½	Chronic bronchitis; bronchial glands enlarged; anemia; faulty diet	Up only eight hours; attend school; deep breathing exercises
21	Bess A.....	11	54	52⅝	19⅜	1,800	2,800	6½	3½	6⅜	16⅜	Pirquet positive; goiter; faulty diet; bronchial glands enlarged; anorexia; up too late	Bed one month; compound solution of iodine daily; then up eight hours daily
22	Albert B....	11	54	62	10	1,750	2,600	7½	2¼	2	11¾	Anorexia; faulty food habits; up too late	Forced feedings; up eight hours daily
23	Mary M.....	11¼	55	65⅛	8⅞	1,700	2,800	4½	4½	3	12	Tuberculosis (pleurisy with effusion); asthenia	Thoracocentesis; 900 cc. fluid; bed two months; then up four to eight hours; cod liver oil and creosote; heliotherapy
24	Mary H.....	11½	55	65⅜	8⅜	1,900	2,800	5⅜	4½	4½	14⅜	Pirquet positive; asthenia; bronchial glands much enlarged	Up six hours daily for six weeks; then school for one half day
25	Janet M.....	12	54	60	12	1,800	2,800	3	6½	2	11½	Faulty food habits; up too late; anemia; goiter; tachycardia; basal metabolism increased	Forced feedings; up eight hours daily; compound solution of iodine and iron
26	Robert B....	12	55	67⅜	8⅝	2,400	3,000	4½	3	1⅝	9⅛	Pirquet positive; bronchial and cervical gland enlarged	Forced feedings; up eight hours daily; heliotherapy
27	George P....	12	55	68¼	8	2,000	2,700	2¼	1¼	1⅜	4⅞	Pirquet positive; fatigue; anemia; constipation	Breakfast and supper in bed; deep breathing; two hour noon nap
28	Harold S....	12¼	56	54	26	900	2,800	14	3½	2	19½	Pirquet positive; anorexia; slow convalescence from mastoid (two months)	Bed six weeks, then up six hours daily; heliotherapy
29	Elizabeth A.	12⅛	57	65	18	2,300	2,900	9⅛	3	2⅛	14¼	Pirquet positive; goiter; bronchial glands	Compound solution of iodine daily; bed four weeks; then breakfast and supper in bed
30	Maude A....	12½	54	58	13	2,200	2,800	5¼	3¾	1½	10½	Pirquet positive; goiter; bronchial glands very large	Bed two weeks then up six to eight hours; compound solution of iodine daily
	Averages..	....	..	....	....	.....	.....	5	3½	2 9/10	11		

or powdered protein milk may be of value until the spell of anorexia is broken. Foods should be palatable. It is prudent to start with the child's favorite vegetable, cereal, bread, meat or other dishes, provided sweets are not included. Many capricious appetites will respond if these simple rules are conscientiously enforced for a week or two. A change in environment (hospital) or trained help may facilitate matters during the first few weeks.

It was not possible to make each child reach the average weight within three months. Poor results occurred most frequently when the handicaps were not removed; i. e., if the child was not "free to gain." A nervous environment, premature birth, the inheritance of a small stature, the presence of diseased tonsils and adenoids, too rapid growth in height and lack of cooperation were the most frequent causes of failure. Our records show that:

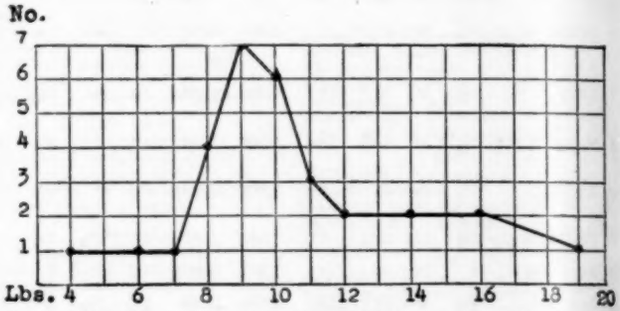
1. Many of the underweight children had been overweight during infancy.
2. Many had been allowed to eat at the family table at an early age.
3. Most of the so-called food idiosyncrasies, about which doting mothers are wont to complain, are imaginary.
4. An asthenic habitus may be outgrown within three months if the weight increases sufficiently.
5. Many had eaten insufficient food for years.
6. Many did not go to bed sufficiently early.

Good results are due to the removal of the underlying cause, cooperation, the eating of sufficient food of the proper kind and the establishment of ample rest, exercise and play. When the child reaches the average weight, the parent is encouraged to keep an accurate record for at least one day each fortnight for six months, then once a month for years, to convince herself that the proper diet and routine are rigidly followed. Such progress reports are mailed to the physician every few months, and the child is examined several times during the subsequent years. If the weight becomes stationary, the intensive routine is again resumed. Individualization of the underweight child, as in the feeding of the infant who fails to thrive on a routine formula, often yields surprisingly lasting results.

An analysis of thirty consecutive underweight children (table 2), aged from 5 to 12 years, treated for three months by this "individual" method of intensive feeding reveals that:

1. Most of the patients fatigued easily, had poor posture and were anemic.
2. No child had been eating sufficient food; twenty-four had faulty food habits (improper food, eating between meals, especially sweets and iced foods or drinks).
3. Twenty-six had been having insufficient rest.
4. In sixteen the cutaneous tuberculin test was positive. These included eight patients with bronchial gland tuberculosis; three children with tuberculous pleurisy with effusion; two with bone tuberculosis, and one each with cervical glands and pulmonary tuberculosis.
5. All but two were above the average height for age; twenty were of the asthenic type.
6. The thyroid gland was visibly enlarged in nine; two of these had tachycardia and increased basal metabolic rates.
7. Three had active, tardy rickets.

The results were gratifying in most instances; the few who failed to cooperate gained the least. Almost without exception, coincident with the weight increase there was marked improvement in the pathologic condition. The average gain for the thirty children (shown in the accompanying chart) during the first month equaled 5 pounds (2.3 Kg.); during the second month, 3½ pounds (1.6 Kg.); and during the third month, 2 9/10 pounds (1.4 Kg.). The average gain for the three month period exceeded eleven pounds (5 Kg.). As the average annual gain for children of these ages does not exceed 6 pounds (2.7 Kg.), the average weight increase during the three months of forced feeding exceeds five times the average rate of gain. No use was made of such incentives as prizes, rewards, photographs before and after, lectures to parents, or trained nutritional workers in the homes. The exceptional results obtained with this individual method of intensive feeding of underweight children is undoubtedly due to the fact that in its evolution many of the principles advocated by Czerny,[4] Pirquet,[5] McCollum,[6] Emerson,[2] and Smith[1] were incorporated. To bring a child's weight within normal limits and keep it there is a prophylactic and therapeutic measure, seldom emphasized sufficiently in the prevention and cure of a number of otherwise chronic ailments.



Pounds gained in three months; thirty children; average gain, 11 pounds.

CONCLUSIONS

1. The intensive, individual method of treatment of many malnourished children seen in office practice often yields immediate results, which continue.
2. In thirty consecutive cases here reported the average gains were 5 pounds for the first month, 3½ pounds for the second month, and 2 9/10 pounds for the third month, an average of more than 11 pounds for three months, or five times the average rate of gain.
3. Coincident with the weight increase there was usually marked improvement or disappearance of the pathologic condition.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. ALDRICH AND SAUER

DR. L. T. ROYSTER, University, Va.: In considering this question of anorexia, we must differentiate between that based on altered or pathologic physiology and that based on true pathologic processes. Certain gastro-intestinal disturbances are based on altered physiology. Nervous stimuli of various kinds may reduce the digestive power of the child. Exactly how they act, I do not know. Pediatricians have added somewhat to the complication of the mother's problem. We have emphasized some points to such an extent that we make the handling of infants or young children a serious proposition. One of the most potent causes of anorexia in the infant is prescribed amounts of food at stated intervals. The more one tries to force so many ounces per feeding on the child, the

6. McCollum, E. V., and Simmonds, Nina: The Newer Knowledge of Nutrition, ed. 3, New York, the Macmillan Company, 1925.

sooner some degree of anorexia will result. The various environmental conditions that have been mentioned undoubtedly affect a neurotic child. The child gets into a vicious circle. Malnutrition produces muscular fatigue. What would be a normal amount of food in a well child becomes an excessive amount in a tired child. I do not know how we can always prevent trouble until we have the public educated in the meaning of these things. Pathologic processes of various kinds, such as bad teeth or infected tonsils, may cause anorexia. Home environment is to be especially observed. A neurotic family tendency, inadequate amount of rest and bad food habits often result in malnutrition in these older children. When to these influences is added additional work out of school hours, for example, the acquiring of certain accomplishments such as music and dancing, all excellent in a normal child, nervousness is apt to develop. Parents have in many instances become too much educated. What is needed today is a little more education of the physician and a little less education of the parents.

DR. JOHN FOOTE, Washington, D. C.: We have not succeeded in educating the average parent in the present school and present age. The school child is more or less neglected. Many children are helped by nutrition classes, but not all are helped since underlying causes frequently require medical diagnosis, and very frequently only a hasty examination is made by the school physician. It is more important to know what kind of a person has a disease than to know what kind of a disease a person has. Children, like adults, are various kinds of persons. Many differences in average weight and height are caused by racial and hereditary characteristics. Even when we use the most approved tables, we may not be quite certain that we are finding malnutrition in one child and not finding it in another. It is the discovery of the remarkably abnormal child with remedial pathologic defect that the nutrition class in school has its greatest benefit. Are we ready to treat these children? Are we always prepared to give them the individual attention which they require? The physical conditions Dr. Sauer enumerated will be benefited by rest and proper diet. Both Dr. Sauer and Dr. Aldrich have considered a condition which is prevalent among children of preschool age—that of the child who will not eat. This is probably due to bad handling in the earlier periods of life, but after all, we should try to find out the psychologic basis for it. Psychologists are agreed that there are two main causes: First, the child does not have the sharp mental reaction such as we have. He has impressions and associations when he is very young and develops a sort of inverted fetishism if something unpleasant occurs, as when he is being given a particular food. The next time the food is given, the child will remember that something unpleasant has happened which he will connect with it. He will definitely dislike the food, not remembering why he dislikes it. The second cause is the condition which the psychologist calls negativism; the desire of the child to have power over his elders. That is found in every child in the desire to be big and to do what big people do. When he finds that there is something which the big people cannot make him do, then he gets pleasure in not eating, and he gets more pleasure in not eating than he formerly did in eating, particularly if he is not very happy.

DR. E. J. HUENEKENS, Minneapolis: In our preschool clinic in Minneapolis, we have had to use modifications of both methods advocated by the authors. As a prophylactic, I cannot imagine anything better or more effective than what Dr. Aldrich advocated—prophlaxis. When it comes to treatment, the methods he urges should be used. We have found many cases in which that method does not yield results after the anorexia has been long established. When we get such cases, we adopt the experimental attitude. We feel that if one method will not work, we will try another; we have to change the methods with different types of children and with children under different types of environment. To say that with some of these children we have to use force to get them to eat does not really, at first glance, sound intelligent. However, the kind of force-feeding we use is done by trained persons with the proper temperament, calm, phlegmatic individuals who can force-feed babies without getting them excited. In this manner certain types of babies can be made to eat and taught good habits of eating by force-feeding. I really think that Dr. Aldrich's method of not dramatizing the eating of food should be tried first, but there are certain cases in which force-feeding will yield the better results.

DR. OLIVER W. HILL, Knoxville, Tenn.: I wish to commend Dr. Aldrich on his attitude in advocating that the child be left some individuality in the selection of food. I am speaking of the runabout child, from 2 to 4 years old or older. To set this child down to something he considers unpalatable because you are fond of it, and expect him to eat it with gusto, is asking too much. Imagine a child being set down to spinach, half-cooked rice and a glass of tepid milk, and being expected to eat with pleasure. He won't do it. But one can, by not paying too close attention to the calory values, and yet not losing sight of his requirements, allow this child to select among the variety of foods that he will eat, and his appetite will by that means improve. The environment at mealtime should be considered. Each child is an individual. Dr. Huenekens tells us that a suave individual can force-feed children. Some children will eat better if allowed to eat what they please. I have an institution with from sixty to seventy children in which we observe this very carefully. Some children, if one tries to force-feed them, will not eat; they cry and fret and then they do not properly digest the food.

DR. A. J. SCOTT, Los Angeles: There are two points that I would like to stress; first, the necessity of rest, particularly the midday rest. These children wear themselves out, and if they do not get that half hour or hour rest in the middle of the day the anorexia is aggravated. Secondly, we pediatricians in southern California, where the weather is warm (and I think that this applies in all warm climates), object to the use on the part of mothers and some physicians of much butter and rich milk or cream, with the idea of fattening the child. It has been our experience that this seems to inhibit or lessen the appetite, and we have found that by limiting the quantity of butter and using skimmed, certified milk, the results are better.

DR. M. L. TURNER, Des Moines, Iowa: I believe that rich food is one of the greatest impairments to the appetite. Not one of us can drink half as much cream as skim milk. If a child is fed cream over any period of time, his appetite will be impaired. In one of my families the mother insists that the child should have as much money for candy as the father has for tobacco. The child who eats rich foods cannot possibly have a very strong appetite. Another cause of anorexia is too frequent feeding. One of the best things for anorexia is hunger. "A crust of bread is a banquet to a hungry man." When we get hungry, we will eat anything. That is also true of the child. Another reason, as Dr. Foote mentioned, is that these children are combative, and they don't want to eat. If they can overcome the suggestion of the parent, they are going to stick to it. There is a difference in these children, too. No two persons react in the same way. There is a difference between the malnourished child and the child under standard weight. A malnourished child is a pathologic child; an underweight child does not have to be a malnourished child. Such a child can be 10 per cent or more underweight if it is a family trait for that child to be light. We make a great deal of fuss about these children being underweight when it is a natural trait. I believe that three meals a day is enough for any child to have after it is 1 year old. I am not at all in sympathy with having them drink milk during recess in school. These children take food at 6 o'clock at night and do not get breakfast until 8 o'clock in the morning. Fourteen hours pass without the child having food and then we feed him three times in four hours. "Consistency thou art a jewel."

DR. CLIFFORD G. GRULEE, Chicago: I have been more or less familiar with Dr. Aldrich's results for some time. My experience has been definitely in agreement with his. I want to clear up one point that I think has resulted in some confusion; namely, that Dr. Aldrich has not advocated a method of treatment: he has advocated a method of prophylaxis. I am not altogether sure about tonsillectomy. Of course, diseased tonsils should be removed, but one should remember

that for twenty-four hours or longer after a child has had his tonsils removed he is in a state of hunger, and I am not sure that the aid to the appetite by the removal of tonsils is not as much due to the period of hunger as it is due to the removal of the focus of infection.

DR. FRED MOORE, Des Moines, Iowa: I should like to know whether or not Dr. Sauer has established standards for determining fatigue.

DR. C. A. ALDRICH, Winnetka, Ill.: In regard to the established cases of anorexia, the three main psychologic causes for this condition are, first, negativism; second, the child's desire to assert his authority, and third, his craving for attention. In the first instance, he does not eat because he does not want to do anything he is made to do. In the second instance, he uses refusal to eat as a method of obtaining special favors; in other words, he uses the "big stick" on his parents. In the third case, he uses refusal as a means of attracting attention to himself. We can use all three of these psychic reactions to our own advantage if we only have the sense to do so. Thus, we can tell the child with negativism that he cannot have so much to eat. Make food difficult for him to get. I have done this repeatedly with startling results. By carrying out such a technic the mother can reverse the effect of negativism so that the child will develop an appetite. The child's use of refusal to eat as a means of obtaining special favors must be combated by showing him that it does not work. Desired pleasures should be taken away from a child making such an effort. In the third case, when he desires attention, we should see to it that good eating habits are rewarded by showing attention to the child, and that bad eating behavior is absolutely neglected. Many children need more of their mother's attention than they get. Too much of the feeding is left to unintelligent or unsympathetic nurses. In my experience, no dietary treatment of established anorexia has been so spectacular in its results as the withdrawal of butter fat from the diet. I am glad that Dr. Royster seconded me in the matter of propaganda, and I want to insist that we must let parents know in advance about the problems they are likely to meet so that they can use preventive measures.

DR. L. W. SAUER, Evanston, Ill.: In regard to Dr. Hill's question about limiting the intake of fluids between meals, we give most of the milk between meals at times when ordinarily the child would get water. Water seems to make the anorexia worse, or dilutes the gastric juices and thus interferes with digestion. In answer to Dr. Scott's question in regard to warm climate: years ago when I tried the class method in my office I failed to get results compared to these. If I saw an underweight child during the summer, I would tell the mother to bring the child back in October when we would form our groups. I did not get the results then that I now get during the summer. This is probably due to individualization, no school work and more rest. Combating anorexia can be done in the summer as well as in the winter. Some of my best results are during vacation months. As far as fatigue is concerned (Dr. Moore's question), we have observed nothing other than the physique of the child, the posture and the results we get by keeping him in bed.

Play More Developmental than Gymnastics.—Generally speaking, whatever is exercised will grow. The important question, then, as to any given activity from the educational point of view, is: What powers and organs does it exercise? For it is certain, at least, that the growth induced by it will go no deeper than the action went; an organ not used will not be affected, for any organ in a way that it was not used. Massage or gymnastics, though they will develop the muscles, will not reach the mind—at least in the way that play, using the same muscles, would have reached it. Nor will they establish the same relation between mind and muscle. The arm of a gymnast is a good arm in its anatomical aspect, but it is not a boxer's arm, nor the carpenter's nor the violinist's. It has large muscles; but it is not, except in the evolutions that produce it, the trained servant of the brain.—Lee: Play in Education, p. 45.

METAMORPHOSIS OF TUBERCULOUS LUNG CHANGES AS OBSERVED IN SERIAL ROENTGENOGRAMS *

FRANK S. BISSELL, M.D.
MINNEAPOLIS

Although the value of the roentgen-ray examination of the lungs is now firmly established as an indispensable step in the early diagnosis of tuberculosis, its greater value in the determination of prognosis and management is still generally unrecognized.

As a rule, every pathologic change occurring within the lung causes a variation in the relative density of the area involved. Through the agency of serial roentgen-ray examinations it is possible to follow these changes step by step, and thus finally to classify each case as (1) progressive, (2) regressive or (3) arrested.

Without the control of periodic roentgenologic observations, it would be necessary to place in a sanatorium all cases of pulmonary tuberculosis giving clinical evidence of activity. With adequate control, however, this expensive procedure becomes unnecessary and at times reprehensible.

I have observed many cases, over long periods, in which the lesions as seen roentgenologically remained essentially unchanged, despite the persistence of râles and temperature variations. I have seen similar cases in which the patients were in sanatoriums for months, even years, and were finally discharged with râles and occasional temperature variations still persistent.

Many of these patients may be safely treated at home if their condition is carefully checked up by periodic roentgen-ray examinations of the heart and lungs. When the lesions are found to be progressive or tending toward confluence and caseation, sanatorium management becomes imperative. On the other hand, if the lesions show a tendency toward disappearance or fibrosis, even though physical signs and the temperature curve indicate activity, the case may well be managed more conservatively.

It cannot be stated too strongly or too frequently that the diagnosis of pulmonary tuberculosis does not alone constitute justification for an indeterminate sentence to sanatorium life.

REPORT OF CASES

CASE 1.—Miss S., a sister of a well known physician, was diagnosed as having pulmonary tuberculosis five years ago. There were constant râles over one apex. In the same region, characteristic roentgenographic evidence of tuberculosis was noted. The sputum was blood streaked.

Since that time she has been kept under occasional observation with periodic roentgen-ray examinations. She has lived an undisturbed life of moderate activity. The râles are still present and there is occasional bloody sputum, but the roentgenographic evidences of tuberculosis do not increase.

My contention is that this line of management is infinitely more satisfactory and more economical than that pursued in case 2.

CASE 2.—Miss E. N., a nurse in training, was referred for roentgen-ray examination in October, 1924, because of slight progressive loss of weight and suggestive physical signs. My roentgen-ray report was "minimal tuberculosis involving one upper lobe." She was sent to a sanatorium, where she remained under observation eighteen months. She now has slight physical signs and the roentgenographic changes, though slightly

* Read before the Section on Radiology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

increased, are still minimal. Apparently nothing was gained by her long sojourn in the sanatorium, with its attendant economic loss, except a more conclusive diagnosis.

COMMENT

A localized group of tubercles surrounded by a pneumonic zone may not show any appreciable roentgenographic change over a period of several months, and then may gradually become fibrotic without the involvement of other parts of the lung fields. If all such patients are sent to sanatoriums the economic loss is great, and other patients in greater need of treatment are thereby excluded.

In the exudative type, which the experienced roentgenologist recognizes by the densely homogeneous areas replacing the normal lung, the indication is for immediate sanatorium management, because these changes are often precursors of caseation and cavitation. Here the periodic roentgen-ray examination becomes of increasing importance since the lesions may be observed to soften, tending toward cavity formation or to increase in density and become more sharply defined, tending toward calcification and pointing to a favorable prognosis. A well defined border is always a favorable prognostic sign because it suggests the presence of a surrounding fibrous capsule.

Tubercles are not readily differentiated from other proliferative infiltrations, and frequently the only evidence of tuberculosis is the apparent filling and obliteration of groups of air cells. This observation conforms to existing knowledge of the pathologic changes, since it is now well known that tuberculous granulation tissue may be the sole reaction to large numbers of tubercle bacilli.

Observed in the roentgenogram, these filled air cells may appear as tiny isolated areas of increased density confined to a small part of one lung field; they may occur in small groups like bronchopneumonic patches in different parts of both lung fields, or they may become confluent and appear as large pneumonic areas.

This type of tuberculosis requires much closer observation than the proliferative type and roentgenologic examinations should be repeated at intervals of a few weeks. By following this procedure each case can soon be properly classified as to type, prognosis and treatment.

CAVITIES

When cavities have formed, the roentgenologic examnation assists in the solution of many clinical problems. Thus, one may be able to determine whether the cavity drains freely and completely into a bronchus; whether it is thick walled or thin walled; whether it is becoming larger or smaller, or whether the inflammatory reaction around it extends to the pleura, thus making satisfactory artificial pneumothorax impossible.

A large thin walled cavity without much pulmonary thickening demands immediate collapse of the lung, even in the absence of clinical signs and symptoms. If my observations and conclusions are well founded, these are the cases that result in sudden and unexpected hemorrhage, often with a fatal termination. While the patients are known to have had tuberculosis, the condition is often considered arrested because the signs and symptoms are meager. On the other hand, a large cavity with thick walls may become completely sterile and lined with a smooth membrane of epithelium. One learns to recognize these in the course of serial examinations, because they never contain fluid contents, never change and do not show inflammatory reactions around them.

THE HEALING PROCESS

1. Miliary tubercles which heal by becoming first hyaline and then fibrous nodules are recognized in the roentgenogram by their greater size and density and by their wide distribution.

2. Caseous lesions and cavities show their tendency to heal as they become circumscribed by a dense fibrous wall.

3. Healing lesions always appear sharply defined and dense, with well aerated lung tissue closely surrounding them.

4. Proliferative or exudative lesions may gradually become replaced by strands of fibrous tissue, a conclusive sign of healing.

5. Certain types of lesion calcify early, always an excellent prognostic indication, while other types may heal without any evidence of caseation or calcification.

Tuberculous lesions which are more or less circumscribed by dense fibrous walls are usually latent or arrested, and even the presence of persistent râles does not prove them otherwise. A series of roentgen-ray examinations conducted over a period of years frequently fails to reveal any change whatever in lesions of this type. In the same cases, however, there may be other lesions scattered through the parenchyma of the lung, and more significant of progressive tuberculosis. Hence it is important, when an isolated fibrocaseous lesion is present, to study both lung fields with the most scrupulous care. A patient with an old, well circumscribed fibrocaseous lesion in one upper lung field may have an inconspicuous but active lesion at the base, and this is always of grave prognostic significance.

It is probable that the earliest tissue reactions to the bacillary invasion are rarely observed roentgenologically, since the symptoms are inconspicuous and the patients do not come under medical observation. The effect of the initial injury is an acute inflammatory reaction, which Rist states he has frequently observed fluoroscopically but which is not mentioned by other writers.

The early parenchymal changes observed by the roentgenologist are probably due to the obliteration of air cells by tuberculous granulation tissue or exudate. The bacilli have grown from the bronchus into the alveoli to form tubercles.

Although these may be secondary changes, they are very early ones and are seen radiographically as clusters of solid airless alveoli about the ends of the terminal bronchioles.

INFLUENZA

A type of lung infection which leads to some confusion in radiologic diagnosis is that which occasionally occurs during or following an attack of influenza.

If the roentgenologist knows the history of the case he will probably escape error, since the resemblance is to chronic, not acute, tuberculosis.

When seen at its inception, the infection appears to extend rapidly from hilum to periphery, while in tuberculosis the first lesions are observed in the periphery. As usually first observed, however, this point of differentiation is less apparent.

In previous papers, I have called attention to certain lung changes observed roentgenologically which I have attributed to streptococcus invasions. Pathologists are now recognizing these changes as bizarre manifestations of *Streptococcus hemolyticus* infections. The lesions so closely resemble those of tuberculosis that only microscopically can they be differentiated. This is further evidence that roentgenologic studies should occupy a more important place in pathologic investigations.

The recognition, radiologically, of tuberculous lesions does not alone justify a diagnosis of clinical tuberculosis. Although the internist or family physician, with his more exact knowledge of the history, the clinical manifestations and the laboratory observations, is far better able to determine whether the patient is ill with tuberculosis or merely the innocent host to quiescent lesions, the radiologist who makes periodic examinations may offer great assistance to him.

SUMMARY

The accepted management of active pulmonary tuberculosis requires an indeterminate sojourn in a sanatorium.

Apparently serious attempts are not made to select sanatorium cases except on the basis of their state of advancement. Yet many cases never advance beyond the minimal stage, even when untreated. While it is not always possible to select these cases at the first examination, serious risk is not encountered by keeping them under observation, with periodic roentgen-ray examinations, until they can be properly classified. The more general adoption of this procedure would avoid an unnecessary economic loss to the individual as well as to the community.

The periodic roentgen-ray examination of the tuberculous lung may be made to serve an important function in the differentiation of pathologic changes indicating a tendency toward arrest or progression.

More accurate prognosis may be attained through the agency of roentgenologic studies directed toward the recognition of such changes as fibrosis, calcification, cavitation, caseation and the tendency toward the isolation or dissemination of lesions.

Tuberculous lesions, in themselves, do not present macroscopic or radiologic characteristics by which they can invariably be differentiated from lesions caused by certain other infections. Often, however, the distribution of the lesions within the lung field is distinctive. The periodic roentgen-ray examination, through which it is possible to observe the metamorphosis of questionable lesions, serves not only to differentiate them as to etiology, but also to determine or to measure the effects produced on the surrounding lung or the resistance of the host to the infectious agent.

Lesions which remain essentially unchanged for months or years should not be permitted, by too much coddling, to convert a comparatively healthy host into a chronically neurasthenic individual.

A true tuberculous cavity is always dangerous, but it is much less to be feared if it has a thick wall and is surrounded by fibrotic lung tissue.

Lesions which appear and disappear in various parts of either lung field point to low virulence or high resistance, and if they do not increase in number or area should be accepted as relatively benign.

Many patients with tuberculous lesions in the lungs showing slight signs and symptoms of activity may properly be kept under home and vocational management, if they are carefully controlled by periodic roentgen-ray examinations.

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ABSTRACT OF DISCUSSION

DR. WILLIS F. MANGES, Philadelphia: Dr. Bissell has brought to our attention the very important point that we ought to help not merely in making a diagnosis of tuberculosis, but in determining the progress of the disease. Of course, we are not able to tell by means of shadows that this or that condition is not a virulent infection. One patient may have only a very small area of involvement in a lung and have a very high temperature, whereas another may have more or less extensive disease, which is not detected because there has not been a definite reaction to the infection. We, as roentgenologists, must be careful in our reports in speaking of "active" cases, "healing" cases or "acute" or "chronic" cases. We must be careful to avoid misuse of the term active. We may use the term unhealed. We can improve our own part by paying more attention to technic. We can and we ought to produce better radiographic results. I am rather convinced that if we are going to be of any more benefit to the patient in an early stage of disease than we are now, we shall have to do it by way of perfection in technic. We may have to resort to extremely rapid exposures, so that pulsations in the blood vessels and all sorts of movements may be eliminated. I heartily approve of serial studies of the chest.

DR. FRANK B. STEPHENSON, Denver: A case illustrating the progression of a rather unusual type of tuberculous lung involvement was that of a girl, about 19, perfectly healthy in appearance and of the buxom type, who had been perfectly well and had never had any indication of pulmonary disease. She had had a tonsillectomy performed for an apparently local tonsillar condition, and within a week she began to develop fever and chills, and very soon began to produce sputum that became very copious. Her chest was roentgenographed about three weeks later. We found a shadow that we thought might be a tooth, but it turned out not to be one. We made a tentative diagnosis of lung abscess. In studying the plates carefully, I thought I saw down in the right lower lobe some little nests of nodular-like shadows that were suggestive of tuberculous involvement. I recommended a sputum examination. The sputum was found to be loaded with tubercle bacilli. We found calcified nodules at the hilum but nothing in the apexes suggestive of any old or recent tuberculous involvement. A lateral view showed the position of the ring rather definitely backward. We found that it did not follow the cleavage of the lung. We never caught the ring at any time when it seemed to be filled with fluid. After about a month we found that the ring had begun to contract, and that there was considerably more density of shadow out to the left, which we interpreted as infiltration. We began to see, on the other side, signs of what we thought were spots of infiltration, and more isolated spots containing nodular densities. Eventually there was complete contraction and apparent scar formation at that point, much more density out of the left and rather diffuse involvement over the entire right lung, so that at the present time there is a great deal of involvement on the right side with a rather rapid fibrosis formation in the upper region, and contraction on the opposite side from the original lesion.

DR. KENNON DUNHAM, Cincinnati: The only way I can understand what many men mean when they write about the chest is to see their plates and talk to them about them. The point that Dr. Manges brought up is the important one in Dr. Bissell's paper. There is probably nothing more important in the study of chest conditions than watching what is happening. The best work we can do is to clarify the numerous lung problems which are so frequently taken for granted as already solved. They may be answered, but they certainly are not answered in language that we can understand.

DR. H. K. PANCOAST, Philadelphia: In connection with the suggestions of Dr. Dunham and Dr. Hickey for a uniform nomenclature of roentgen-ray appearances in pulmonary tuberculosis, I might say that the Normal Chest Committee of the National Tuberculosis Association, having finished its work on the normal or healthy chest, expects in the near future to take up the problem of standardization of roentgenographic appearances and the nomenclature referable thereto in pulmonary tuberculosis. The committee will be augmented for the purpose by the addition of several pathologists, internists and roentgenologists.

DR. F. S. BISSELL, Minneapolis: I fully appreciate the danger of attempting to interpret roentgen-ray densities in terms of the known pathologic changes. This is especially

apparent to me now because, within the past week, I have seen a competent pathologist make a mistaken postmortem diagnosis of pulmonary tuberculosis, although the infection proved later to be a streptococcic one. On gross examination the lesions present had all of the characteristics of tuberculosis, but microscopic examination did not show any evidence of that disease. Even definite cavities were present. Thus it becomes more apparent with greater experience that it is not always possible to make this differential diagnosis radiologically. Nevertheless, it is usually possible to recognize the gross characteristics of fibrosis, infiltration, exudate or other pathologic changes. These should be described in the roentgen-ray report and conclusions based on them. Such unrecognized terms as "the fan" or "the cone" should be avoided. The serial roentgen-ray examinations have their greatest value in the discovery of changing pathologic characteristics.

STUDIES OF STAPHYLOCOCCUS FILTRATES

I. DEMONSTRATION OF AN EXOTOXIN BY SKIN TESTS IN MAN AND ITS NEUTRALIZATION BY ANTITOXIC SERUMS *

ISADORE PILOT, M.D.
AND
M. L. AFREMOW, B.S.
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Following the demonstration of an exotoxin by the Dicks [1] from strains of hemolytic streptococci isolated from scarlet fever, Parker [2] reported similar toxic substances in sterile filtrates of certain strains of *Staphylococcus aureus*. In her work the skin reactions were observed in rabbits. These reactions were neutralized by the serums of rabbits immunized intradermally with the exotoxin. In our work of testing the staphylococcus filtrates we employed the methods that were used on man by the Dicks [1] with streptococcus toxin.

Freshly isolated strains of *Staphylococcus aureus* were obtained from various lesions, such as furuncles, carbuncles, abscesses of the breast and kidney, and from fatal cases of staphylococcus septic pyemia. They produced typical pigment, and on blood agar 50 per cent of the strains caused hemolysis. Both hemolytic and nonhemolytic strains produced potent toxins in the filtrates. All strains tested yielded exotoxin, which, however, varied considerably in potency.

The staphylococci were grown in broth prepared with Witte's peptone, p_H 7.4, and incubated at 37 C. for four days. Rapid abundant growth was obtained in all but one strain. The broth was filtered through Berkefeld filters, and the filtrates were tried for sterility by smears and cultures. The sterile filtrates were diluted from 1:250 to 1:2,000 and injected intradermally in doses of 0.2 cc. into the middle portion of the flexor surface of the forearm. Control injections were made on the opposite arm with the filtrate heated at 60 C. for one hour. Readings were made in from twenty to twenty-four hours, when reactions appeared most marked.

A zone of erythema measuring from 2 to 5 cm. or more, together with swelling and tenderness, was typical within twenty-four hours, became less marked in forty-eight hours, and disappeared completely in seventy-two hours, leaving a variable amount of yellow pigmentation. The control test with heated toxin gave no reaction demonstrating that the skin reacting substance was thermolabile.

In the first series of persons tested, filtrates of nine different strains in a dilution of 1:250 gave positive reactions in from 18 to 56 per cent, or an average of 42 per cent of 244 persons from 20 to 70 years of age. In a second series of tests with seven other strains, positive reactions were obtained in 56 per cent of 190 persons, with a dilution of 1:1,000. Ten strains, five hemolytic and five nonhemolytic, were combined and the filtrate tried in various dilutions. A reaction comparable to the skin test dose (1:2,000) of a scarlet fever streptococcus toxin was obtained at a dilution of 1:1,000. With this composite toxin, eighty patients in the medical wards with an average age of 43 gave 63 per cent positive reactions, and in a group of medical students with an average age of 23, forty of eighty-three (48 per cent) gave positive results.

To prepare antitoxin, rabbits were injected intradermally with 0.5 cc. of undiluted composite filtrate for six doses, and with 1 cc. of filtrate intravenously for one dose. The serum obtained neutralized the skin reaction in susceptible persons. In one series the rabbit serum diluted 1:50 neutralized completely the toxin (1:1,000) in eight persons. Serum diluted 1:250 neutralized the same toxin completely in six and partially in five individuals. Control toxin injections (1:1,000) gave strong reactions from 3 to 5 cm. in diameter. In persons giving a positive reaction to streptococcus toxin, the same rabbit serum failed to neutralize the skin reaction.

The staphylococcus antitoxic horse serum of Parker in a dilution of 1:100 neutralized staphylococcus toxin 1:250 in one instance, toxin diluted 1:500 in five instances, and 1:1,000 in six; in no case was the *Streptococcus hemolyticus* toxin affected.

From these results it is evident that the skin reactions of broth filtrates are neutralized by the serums of rabbits and horses injected with the filtrates. These results parallel closely the experiments with filtrates of hemolytic streptococci from scarlet fever, erysipelas,[3] puerperal sepsis [4] and septicemia.[5]

Of interest in this connection is the recent report of Stevens,[6] who confirms Parker's observations and describes cases of *Staphylococcus aureus* infection with a scarlatiniform rash which is blanched by staphylococcus antitoxic serum but not by *Streptococcus scarlatinae* antitoxic serum.

CONCLUSIONS

Sterile broth filtrates of *Staphylococcus aureus* produce a skin reaction when injected intradermally in the forearm of man. These reactions are neutralized by serums of the rabbit and horse immunized by injections of staphylococcus filtrates.

It would appear that such filtrates contain a soluble toxin which forms antitoxin when introduced into rabbits and horses.

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* From the Department of Pathology and Bacteriology of the University of Illinois College of Medicine.

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NEPHROSES *

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At the Meran meeting of the German Pathological Society in 1905, F. von Muller [1] suggested the term nephrosis to distinguish the degenerative from the inflammatory lesions in the kidney. The clinical manifestations of the pathologic lesions which this term was to connote were not well known at this time. The term was objected to by Orth on the ground that it was too much like hydronephrosis, and by Aschoff on the ground of his views with respect to parenchymatous inflammation.

In 1913, Munk [2] worked out the clinical symptoms of degenerative lesions, laying stress on the presence of double refracting bodies in the urine in one rather characteristic clinical syndrome. Munk at this time purposely avoided the term nephrosis on account of the objections raised to it by the pathologists mentioned.

In 1914, the monograph of Volhard and Fahr [3] appeared. The clinical aspect of chronic interstitial nephritis was clearly outlined by Volhard, while the pathologic side was worked out by Fahr. The concept of nephrosis here determined rapidly gained wide recognition, especially among such clinicians as Umber, Strauss, Eppinger and Epstein. It was, however, strongly combated by several pathologists. Aschoff,[4] in 1917, objected to the term on etymological grounds, because it was used in a different sense by various authors, and because, in the cases in which Fahr asserted that there were only degenerative lesions, he could find evidence of inflammation. Later, Aschoff had Bohnenkamp work up the material of the Freiburg Pathologic Institute. On the ground of the theoretical-biologic considerations, on the clinical symptoms and on the histologic observations of the Freiburg material, labeled as tubular nephritis, mercuric chloride kidney, nephrodystrophia tubularis lipoides and amyloid kidney, Bohnenkamp [5] rejected the term nephrosis indicating primary degenerative lesions and suggested the following classification:

A. Predominatingly primary disease of the proximal convoluted tubules—processes capable of recession (with exception of contracted kidney).
   (*a*) Tubular inflammatory processes—defensive reactions.
      1. Nephritis tubularis albuminoides (cloudy swelling, fever kidney).
      2. Nephritis tubularis necrotans—mercuric chloride, uranium kidney.
      3. Tubular disease (nephrodystrophia tubularis lipoides).
B. Primary vascular injury with deposit of amyloid and secondary tubular injury—incapable of recession.
   (*a*) Amyloid kidney.
      1. First stage, isolated amyloidosis of vascular loops.
      2. Second stage, amyloid deposits in vascular loops and tunica propria of the tubules.
      3. Third stage, amyloid contracted kidney.

Most pathologists regard the changes here described in the epithelial cell as degenerative and reject their inflammatory character. Fahr points out that, to admit this, one would have to say that every degeneration begins with inflammation.

In 1918, Löhlein [6] pointed out that one must distinguish between the views of Volhard and those of Fahr with respect to nephrosis. He states in the same article that every pathologic anatomist who reviews a large autopsy material may easily convince himself of the fact that the histologic examination in nearly all cases in which the clinical diagnosis of chronic parenchymatous nephritis was made—recently, indeed, also nephrosis or nephritis with nephrotic outbreak or mixed form—brings the proof that the end-result or a still progressed stage of acute glomerulonephritis is present.

Löhlein in his work on nephritis, published in 1906, showed that the chronic parenchymatous nephritis was a late stage or end-result of acute diffuse glomerulonephritis, with disappearingly few exceptions. There was in this material only one exception, and this has remained the only one in his experience up to the present time, although he has been on the lookout for such cases. However, he states further that the pathologist would do well not to underestimate the frequency of the exceptional case reported by him twelve years before, which the clinician encounters frequently. Löhlein does not agree with Aschoff in his statement that in all cases on which Volhard and Fahr base their statements on true nephrosis changes are present which indicate an old inflammatory process in the glomeruli, and that he (Aschoff) must assume that there are at least in genuine nephrosis secondary changes as the result of an infectious glomerulitis. This disagreement is based on the reexamination of the exceptional cases referred to above and on Fahr's case referred to him. Of these cases he says that one finds indeed here and there somewhat striking glomerular changes; also, indeed, by careful comparison with normal kidney secretions, one may determine that the capillary walls of the glomeruli appear somewhat changed, as if swollen; they are occasionally richer in cells than the normal, containing here and there, in his case, lipoid masses; also the capsular epithelium is somewhat swollen, and here and there shows fatty degeneration. But, according to his opinion, it cannot be proved that all these conditions must be interpreted as residuums of an infectious glomerulitis or of an acute glomerulonephritis. Löhlein thus comes into a close agreement with Fahr, who has described similar changes in the glomeruli in lipoid nephrosis. Löhlein states further that in harmony with the clinical experience (gradual beginning, absence of hypertension), most probably there has not been an acute diffuse glomerulonephritis, although this cannot be proved, for the pathologic changes of the acute stage may subside without leaving a trace.

Munk [2] also describes degenerative changes in the glomeruli in lipoid nephrosis, but thinks they pass over from the tubular changes.

Lowenthal,[7] after an analysis of two cases, comes to the conclusion that the disease which is considered clinically as genuine nephrosis shows also a special pathologic process. Inflammatory changes are not without doubt present. Both the epithelium and the glomeruli are involved, so that the designations tubular nephrosis and glomerular nephrosis seem justified. The changes in the epithelial apparatus are void of unobjectionable indications of an actual degeneration.

* From the Medical and Pathological Departments, University of Tennessee College of Medicine.
* Read before the Section on Practice of Medicine at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

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In the course of chronic nephrosis, a nephrotic contracted kidney develops. Murphy and Warfield [8] have observed a case from the beginning to the autopsy, and they were unable to find evidence of inflammatory changes in the glomeruli.

CLASSIFICATION AND CHARACTERISTICS OF NEPHROSIS

My experience leads me to believe that a recognition of Fahr's latest views on nephrosis would satisfactorily explain the clinical and pathologic facts, and clarify much of the confusion relative to the subject which exists. Fahr [9] would regard nephrosis as a generic term to express the primary degenerative lesions that occur in the kidneys by virtue of their function as excretory organs; therefore, lesions in the tubules and glomeruli. He classifies them as follows:

A. Simple nephrosis.
   (*a*) First stage (first degree of intensity) albuminous degeneration.
   (*b*) Second stage (second degree of intensity) Hyaline-droplet degeneration.
   (*c*) Third stage (third degree of intensity) necrosis.
B. Distinctly characterized nephroses.
   (*a*) Lipoid nephrosis.
   (*b*) Amyloid nephrosis.
   (*c*) Pregnancy nephrosis.
   (*d*) Storing nephroses.

The first and second stages occur in many infectious diseases but may be particularly well represented by the kidney changes in diphtheria. Dörner [10] has recently studied these cases clinically according to the more modern methods. He described as the chief clinical characteristics a slight, quickly passing tendency to edema, marked albuminuria, cylindruria, a slight delay in the iodide excretion, slight retention of sodium chloride, good water and salt excretion, and the absence of hypertension and cardiovascular changes. I have reviewed 100 cases of diphtheria. There was no indication of edema or hypertension in any of these cases; a rather marked albuminuria and casts were found in nineteen. Four of the patients came to autopsy. Figure 1 shows very well the changes described by Fahr for diphtheria nephrosis. The kidneys were distinctly enlarged; the capsule stripped easily, leaving a smooth, outer surface. On section the cortex was widened, of a smutty appearance and well differentiated from the brown pyramids. Microscopically, the glomeruli were well filled with blood; there was no evidence of inflammatory changes. The proximal convoluted tubules showed albuminous and hyaline droplet degeneration; very occasionally small granules of fat, which was not double refracting, could be seen situated at the base of the cell; there were no changes of significance in the interstitial tissue.

The mercuric chloride kidney offers the best example of the third stage, necrotizing nephrosis. The symptoms referable to the kidneys in these cases are polyuria in the beginning in mild cases, and oliguria to anuria in severe cases; many hyaline, granular and epithelial casts, fatty epithelium and leukocytes; injury to salt concentration with diminished salt excretion and nitrogen concentration in the urine normal; high values for nonprotein nitrogen in the blood, which decrease with improvement earlier than does the salt; and absence of, or only slight, edema. The blood pressure is increased only in cases of long continued anuria. The pathologic changes are characterized microscopically by marked degeneration of the epithelium of the proximal convoluted tubules leading to necrosis, and quick and extensive regenerative processes and calcium deposits in the slowly dying cells; the glomeruli are chiefly intact, without inflammation. In the interstitial tissue leukocytic infiltration may be seen around calcium deposits, regarded by some as a reparative process.

LIPOID NEPHROSIS

Of the distinctly characterized nephroses, lipoid nephrosis is probably the most important and the one about which there has been the most discussion. It may occur in association with glomerulonephritis, acute or chronic, with amyloid kidney, and as a disease *sui generis*. I wish to consider the latter particularly.

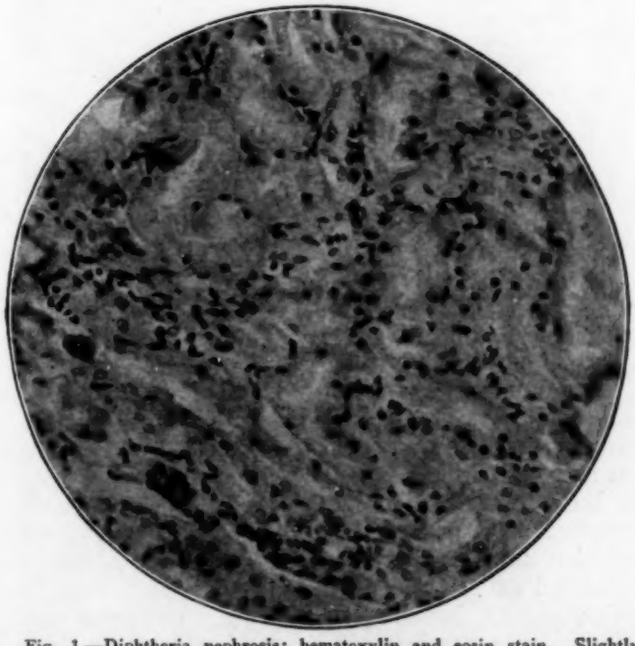

Fig. 1.—Diphtheria nephrosis; hematoxylin and eosin stain. Slightly reduced from a photomicrograph with a magnification of 275 diameters.

Often no cause can be discovered. Munk has called especial attention to syphilis as an etiologic factor. It has also been observed in chronic tuberculosis and chronic suppurative processes; as predisposing causes may be mentioned youth, errors in diet, pregnancy and constitutional inferiority. It is a comparatively rare disease. I have diagnosed the condition nineteen times in something over 600 cases generally included under the generic term Bright's disease.

The onset is usually gradual; not infrequently anorexia, weakness, pains in the back, nausea and vomiting, and diarrhea are complained of. The most prominent objective symptoms are pallor, edema, and frequently general anasarca with transudation into the serous cavities. The edema fluid is pseudochylous and of low specific gravity, with a low protein content and a salt concentration about that of the blood. Cholesterol is also present. The urine shows oliguria, a high specific gravity, marked albuminuria, cylindruria, no hematuria macroscopically, but occasionally a few erythrocytes microscopically, a low salt and a fair nitro-

8. Murphy, F. D., and Warfield, L. W.: Lipoid Nephrosis, Arch. Int. Med. 38: 449 (Oct.) 1926.
9. Fahr: Handbuch der spezielle pathologishen Anatomie und Histologie, F. Henke and Lubarsch G.
10. Dörner: Arbeiten aus der medizinische Klinik in Leipz'g, June, 1918.

gen excretion, and double refractile bodies, free and intracellular.

There is no marked anemia unless due to complication; the blood volume is normal; the serum is pseudochylous; the total protein content of the blood is low; there is a displacement of the protein blood picture to the gross disperse side, the fibrinogen often being nine times and the globulin four times the normal; there is a hypercholesterolemia, and the sedimentation velocity is increased.

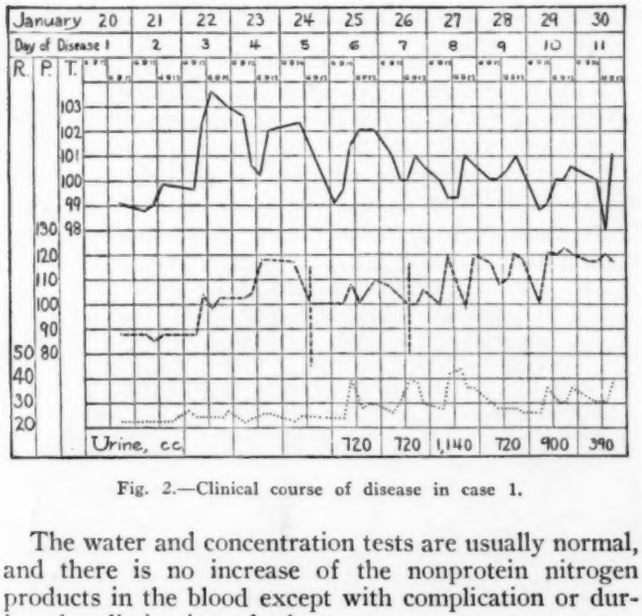

Fig. 2.—Clinical course of disease in case 1.

The water and concentration tests are usually normal, and there is no increase of the nonprotein nitrogen products in the blood except with complication or during the elimination of edema.

True uremia is not present. Eclamptic attacks have been reported but are rare. The eyegrounds are normal. An important observation is the absence of hypertension and cardiac hypertrophy. The basal metabolism has been found low in many cases. The disease is characterized by a very long course, with periods of remission and exacerbation. The patients show a diminished resistance, and complications such as erysipelas, angina, bronchitis, pneumonia, empyema and peritonitis are not infrequent; the last three are the most frequent causes of death.

The pathologic anatomy of the disease is also somewhat characteristic. Macroscopically, the kidneys are usually enlarged, and the capsule strips easily, leaving a smooth, smutty, yellowish to gray surface. There are no hemorrhages to be made out. On section, the substance is soft, doughy and easily torn; the cortex is widened, presenting a color similar to that of the outer surface, possibly more yellowish. The markings are obscured, and opaque spots corresponding to the deposition of lipoids may sometimes be seen. Microscopically, the glomeruli may show focal degenerative changes characterized by widening and swelling of the capillary walls and parietal layer of the capsule, and by fatty degeneration of the parietal layer of the capsule; double refracting substances are seen in old cases, and here and there slight nuclear increase. These changes are described by Fahr as glomerulonephrosis. The proximal convoluted tubules are chiefly involved, showing fatty degeneration of the epithelium or lipoid infiltration, and sometimes vacuolar degeneration; desquamation of degenerated cells; exudation of albumin into the lumen; widening of the tubules with flattening of the epithelium; casts; and efforts at regeneration.

The interstitial tissue of the cortex shows double refracting lipoids; widening, small areas of lymphocytic infiltration, and occasionally small hemorrhages.

The two cases reported here illustrate the clinical and pathologic observations:

REPORT OF CASES

CASE 1.—R. S., a colored youth, aged 17, was admitted for tonsillectomy to the surgical service of the Memphis General Hospital, from the outpatient department, Jan. 20, 1927, with a diagnosis of chronic tonsillitis and chronic diffuse glomerulonephritis. The temperature was 99, the pulse 90, and the blood pressure 115 systolic and 75 diastolic.

The urine was amber, with a specific gravity of 1.020 and acid; the albumin was 4 plus. Casts were not seen but there were from five to ten pus cells to the high power field and an occasional red blood cell.

January 21, a tonsillectomy was performed and the patient was referred to the medical service, the chief complaints being dyspnea, generalized edema, and sore throat.

The family history was negative, but the patient's past history included pneumonia twice in childhood; mumps at 10 years of age; influenza in 1921, and tonsillitis once or twice a year for the past five years. He had been subject to colds all his life. There was no history of gonorrhea or syphilis.

The onset of the present illness had occurred in March, 1926, ten months before, with sore throat, edema of the eyelids and legs, and general anasarca. The boy was confined to bed for a month. He then felt well until September, 1926, when he again had sore throat and swelling of the eyelids and face. He did not go to bed at this time, and the condition cleared up in about three weeks. In December, 1926, he began to have shortness of breath and generalized edema, which had continued until his admission.

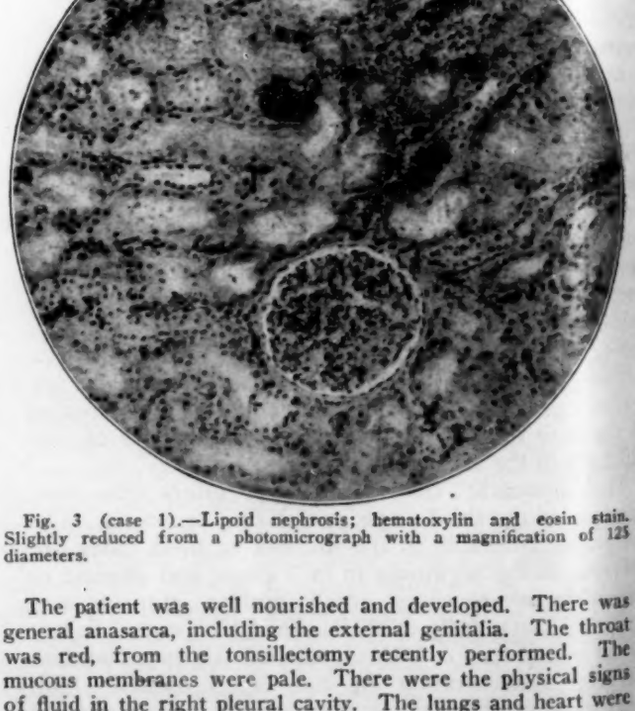

Fig. 3 (case 1).—Lipoid nephrosis; hematoxylin and eosin stain. Slightly reduced from a photomicrograph with a magnification of 125 diameters.

The patient was well nourished and developed. There was general anasarca, including the external genitalia. The throat was red, from the tonsillectomy recently performed. The mucous membranes were pale. There were the physical signs of fluid in the right pleural cavity. The lungs and heart were normal; the apex beat was in the fifth interspace, in the midclavicular line, and the sounds were clear. The abdomen was markedly distended with free fluid; neither the liver nor the spleen was palpable. The reflexes were normal.

The total twenty-four hour urinary output was 360 cc. The specific gravity was 1.030; it was acid, albumin was 4 plus, and granular casts and an occasional red cell were present. The urine that was obtained at autopsy showed double refractile bodies.

Blood examination showed: hemoglobin, 80 per cent (Sahli); total red cells, 4,200,000; leukocytes, 9,500; polymorphonuclears, 82 per cent; small lymphocytes, 10 per cent; large mononuclears, 8 per cent. The serum was pseudochylous. The nonprotein nitrogen was 77 mg. per hundred cubic centimeters and the creatinine 2.04 mg. The Wassermann reaction was negative. Unfortunately, the total proteins, globulin and cholesterol contents were not determined.

January 28, cultures of pneumococcus type II were obtained from the blood. The nonprotein nitrogen was 66.6. Physical signs of bronchopneumonia and peritonitis were detected.

January 31, cultures of pneumococcus type II were obtained from the pleural punctate; with marked increase of symptoms, the patient died.

The accompanying chart shows the course of the temperature, pulse and respiration, and the daily quantity of urine excreted.

Autopsy, February 1, revealed: general anasarca; right seropurulent pleurisy, with an effusion of 1,500 cc.; left hydrothorax, with 600 cc. of pseudochylous fluid; bronchopneumonia; hydropericardium, with 200 cc. of pseudochylous fluid; pneumococcic peritonitis, and lipoid nephrosis.

Macroscopic examination of the kidneys revealed that the right weighed 200 Gm. and the left 240 Gm. The capsule stripped easily; the outer surface was smooth and of a smutty grayish brown; there were no hemorrhages, and on section the cortex was widened, grayish yellow, and sharply differentiated from the dark brown pyramids. Microscopically, the glomeruli were seen to be almost completely filling the capsule, apparently because of the swelling of the capillary walls. The capillaries for the most part contained blood; there was no nuclear increase, and there was an average of 104 nuclei to the glomerulus. A leukocytic increase was not noted, only from ten to twelve leukocytes being demonstrated by the oxidase stain. There was some fat in the glomerular epithelium, and in some places swelling and fat in the capsular epithelium. There was no evidence of inflammation.

The transition portions of the proximal convoluted tubules to the descending limb of Henle's loop were chiefly involved. Here there was marked lipoid infiltration. The fat, for the most part anisotropic, occurred throughout the cells in clumps and in needles. There was rather marked desquamation of the epithelium into the lumen, many of these showing the fat as described. There was rather marked albuminous exudation into the lumen of the tubules. Here and there were hyaline casts. In some areas the tubules were widened with flattened epithelium. There were also indications in these areas of regeneration, as shown in the low cubical epithelium with deeply staining nuclei; some of the epithelial cells in the hematoxylin and eosin preparations showed a washed out appearance. In the interstitial tissue there was abundant double refracting fat in needles and in clumps. In isolated areas there were small accumulations of small round cells, around lodged casts.

CASE 2.—H. L., a negress, aged 33, employed as a washerwoman, was admitted to the medical service of the Memphis General Hospital, Oct. 18, 1923, with generalized edema and soreness all over the body.

There was no history of syphilis. Three miscarriages had occurred at the fourth month when the patient was 18 years of age, and at the fourth month at 28 and at 29 years. She had not menstruated since June, 1923. The family history was negative.

The onset of the present illness had occurred two months before admission, with slight swelling of the feet and face; this swelling gradually increased until the whole body was swollen. Urination was difficult on account of swelling of the external genitalia. The patient thought that she passed a normal quantity of urine. There was constipation, and she had suffered from nausea and vomiting for several weeks.

The patient was well developed and nourished; the pupils were equal and reacted to light and distance. The teeth were bad. The mucous membranes were normal; the breath was foul and the cervical glands were palpable. The heart was normal; the apex beat was in the fifth interspace, in the midclavicular line; the pulse was 120, and the blood pressure 105 systolic and 70 diastolic. There was ascites and general anasarca, including the external genitalia.

The specific gravity of the urine was 1.014; it was acid; albumin was 4 plus; hyaline and granular casts and an occasional red blood cell were present.

Blood examination showed: total white cells, 21,000; polymorphonuclears, 86 per cent; small lymphocytes, 11 per cent, and large mononuclears, 3 per cent. The Wassermann reaction was positive. Urea nitrogen was 9.5 mg. per hundred cubic centimeters.

October 19, the patient had several convulsions, which were followed by coma and death.

Autopsy showed general anasarca and ascites; syphilis of the aorta, and syphilis of the liver; multiple gummas; bronchopneumonia; amyloid contracted kidney, and lipoid nephrosis.

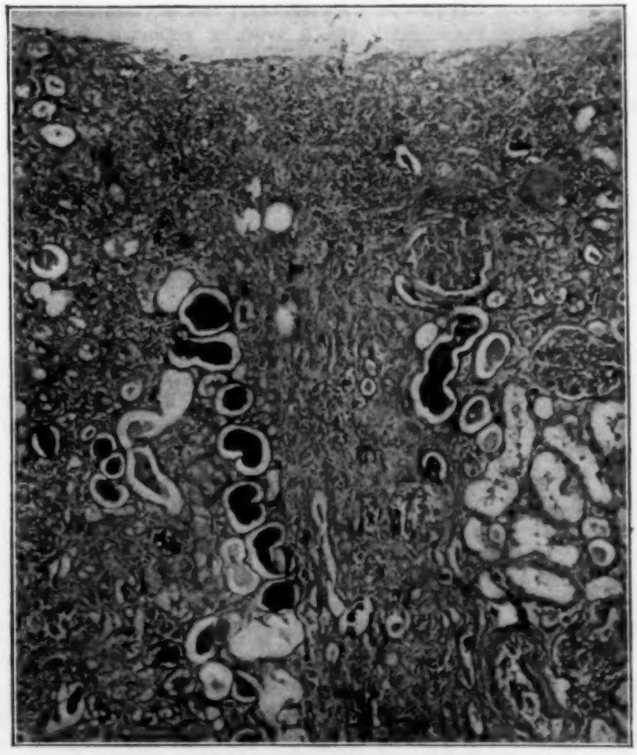

Fig. 4 (case 2).—Amyloid contracted kidney; lipoid nephrosis; hematoxylin and eosin stain. Slightly reduced from a photomicrograph with a magnification of 80 diameters.

Macroscopically the kidneys were increased in size, and the capsule stripped with difficulty. The surface was mottled and grayish red; there were no hemorrhages. On section, the cortex was swollen, gray, slightly greasy in appearance, and sharply differentiated from dark brown pyramids. Microscopically, amyloid infiltration of the capillary walls was seen; some of the glomeruli were entirely destroyed; many of the capillaries contained red cells, and the capsular epithelium was swollen. The tubules in some areas, those belonging to the destroyed glomeruli, were atrophic, destroyed and replaced by young connective tissue. There was an enormous number of casts. The other changes in the tubules were quite similar to those described in case 1. There was also double refractile substance in the interstitial tissue and evidence of much more pronounced reparative changes. The blood vessels were also infiltrated with amyloid.

It is pretty generally agreed that the symptoms in these cases are the result of the associated lipoid nephrosis. Munk thinks that the presence of amyloid makes a more unfavorable prognosis.

CONCLUSIONS

1. The term nephrosis, like many others in medical nomenclature, is not used in its etymological sense, but having gained widespread use may well be retained to express the primary degenerative changes in the kidneys which these organs suffer by reason of their function as excretory organs.

2. The acceptance of Fahr's classification would do much to satisfy the pathologic and clinical facts and to clarify the present confusion with reference to the subject.

3. Lipoid nephrosis, though rare, occurs as a disease *sui generis*, without the presence of inflammatory lesions in the kidney.

915 Madison Avenue.

ABSTRACT OF DISCUSSION

DR. ALFRED STENGEL, Philadelphia: The presentation that Dr. McElroy made indicates a type of nephritis that has become separated from other cases in the last few years. Munk, in 1914, was very much impressed with the etiologic relationship of syphilis to certain kidney diseases, and indicated that those cases were attended with the presence in the urine of double refractive bodies. Long years before, the so-called compound granule cells had been regarded as evidence of severe degenerative disease of the kidney. After Munk's publication, Dr. J. Harold Austin and I made some studies on the patients with the renal disease who came to us in the course of some months' routine, and, curiously enough, without knowing from which patient a given specimen came, we picked out the syphilitic cases. We also picked out a few other cases. They were cases in which there was evidence of rather severe degenerative disease of the kidney. Those cases occurred in young persons without any hereditary syphilis and with very little probability of an undiscovered, acquired syphilis. Whether they are on an infectious basis, I am not prepared to say. One further point to be brought out is the question of whether this lipoidal disease of the kidney does not indicate the existence of some disease of the body in general—a metabolic disease rather than a kidney disease. The peculiar changes in the blood, and the reversal of the albumin and globulin features would indicate that we are dealing with a general disease, and that the kidney disease is only a feature of the general disease.

DR. THOMAS B. FUTCHER, Baltimore: Too often we are inclined to believe that patients with edema and a large quantity of albumin in the urine have nephritis, without giving them any further consideration. Although the nephroses are undoubtedly rare as compared with the inflammatory nephritic changes, if we keep the possibility in mind, it is likely that we shall recognize more of them in the future. What is the clinical picture that might suggest nephrosis to us? In the first place, many of these patients have marked edema of varying degree and of rather long duration. In the second place, the patients are likely to be rather pale and pasty in appearance. A third very important factor is that notwithstanding a long clinical history, most of these patients do not have hypertension, so common in long standing chronic nephritis. They are not likely to have the cardiovascular changes and the cardiac hypertrophy that goes with hypertension of the chronic nephritis cases. The enormous quantity of albumin present in the urine in many of these cases, often up to 10 or 15 Gm. per liter, with the presence in the urine of the so-called lipoid bodies with double refractile contour on microscopic examination, are factors pointing strongly to existence of a nephrosis, rather than a nephritis. The condition is not very uncommon in children. Holt and Howland, in the last edition of their textbook, reported twenty cases. They emphasize the importance of an investigation of the sinuses as a source of infection in these cases. Very often proper handling of this condition tends to clear up the clinical picture. The important thing is that the prognosis in these cases of nephrosis is a great deal better than in the cases of nephritis. They state that most of their patients with nephrosis recovered unless they were carried off by some intercurrent infection, such as happened in two of their cases, both children, who died of pneumonia. From an etiologic standpoint, it might be interesting to note that Claussen and Marriott of St. Louis have advanced the view that the staphylococcus predisposes to the producing of a nephrosis, while the streptococcus tends to produce a nephritis.

DR. LOUIS M. WARFIELD, Milwaukee: Last year, when I reported some cases before the Association of American Physicians, I called attention to the importance and sometimes the great difficulty of diagnosing cases of lipoid nephrosis, the kind that Dr. McElroy calls lipoid nephrosis pseudochylous. As we all know, there are patients with chronic nephritis who start out with blood in the urine, high pressure and all the symptoms and signs of chronic glomerular nephritis who, gradually improving, lose the high blood pressure, cease to have blood in the urine and present the symptoms of lipoid nephrosis. I call attention to that fact in the matter of prognosis. One has to watch such patients very carefully over a long period of time in order to be sure of the diagnosis. Important signs in lipoid nephrosis are continuous low blood pressure, increased cholesterol in the blood, the enormous amount of albumin and the presence of doubly refracting lipoids in the urine. Another matter that I wish to bring out here is the question of diet. It is so generally believed that one should not give albuminous foodstuffs to patients with albumin in the urine that we are apt to starve patients with lipoid nephrosis, or any other kind of nephrosis on the theory that albuminous substances are deleterious to the kidney. When we consider the enormous amount of albumin lost by these persons, it seems logical that we should feed them albumin. I think that there is enough evidence at the present time to show that albumin fed to nephritic persons is not so deleterious as has hitherto been thought.

DR. H. A. CHRISTIAN, Boston: One point that I want to emphasize is the rarity of this condition. Not many of our patients with edema have edema of renal origin; this type of nephrosis or nephritis with edema makes up a pretty small number of the cases in an adult clinic. As far as my own experience goes, the rarity of this particular type, in which there is no glomerular lesion, is very marked; so far I have never yet seen such a case in some twenty odd years of special interest in the subject. All my patients, who apparently fulfilled the criteria as outlined, have shown quite marked glomerular lesions, whether the specimen was obtained at operation or after death for pathologic study of the tissues. I should like to emphasize what Dr. Warfield brought out, that a great many cases of the edematous type fulfilling most and sometimes all of the criteria as outlined by Dr. McElroy are stages in what pathologically at the end is a lesion markedly of the glomeruli to be called glomerular nephritis. Do not take what I am saying as indicating that the condition does not exist. I want to emphasize its rarity by saying that in a considerable period of observation in my own clinic, which is an adult clinic (and one should distinguish that from a children's clinic), I have not yet seen a case of this condition.

DR. J. B. MCELROY, Memphis, Tenn.: For lack of time I did not undertake to discuss the nature of the pathogenesis of this rare condition, but there seems to be unanimity of opinion that a metabolic disturbance is the basic cause, characterized by disturbances of the protein and fat metabolisms. It is important to remember that point, not only on account of the course a disease might take but also on account of the treatment necessary for these conditions. I agree with Dr. Christian that these cases are extremely rare. These two cases are the only ones that I have seen to come to autopsy, but we have made the diagnosis clinically in sixteen or nineteen others among 600 cases of chronic interstitial nephritis. I should like to emphasize the fact that there are almost always lesions in the glomeruli, but they are degenerative and not inflammatory lesions and they are of importance, too, for the further course of this condition. Whether there was such a thing as nephrotic contracted kidney was disputed for a long time, but I am sure that the experimental researches of Zuzuki and others will

show that sometimes a nephrotic contraction of the kidney does take place, and the lesions in the glomeruli are important factors in the production of such a condition. The condition is one, as we will all admit, that is rare, but I think one should be on the lookout for these complications because they have such a different course and require such different treatment. It is much better, I think, to speak of these conditions as nephroses rather than as nephritis with edema.

BREAST FEEDING · PROBLEMS

III. INFANTILE *

C. ULYSSES MOORE, M.D.
AND
HELEN G. DENNIS, M.D.
PORTLAND, ORE.

Arguments in favor of breast feeding are unnecessary except to revive waning enthusiasm. Dr. Oliver Wendell Holmes wisely said that the two breasts of a woman can produce a baby food far superior to anything concoctable by the two hemispheres of the most learned professor's brain. Among infant foods, breast milk alone contains antibodies for human diseases.

Salge has shown that homologous proteins convey antitoxins from mother to child, and Moro has demonstrated a higher bactericidal power in the blood serum of breast fed infants.[1] The clinical significance of these factors is shown by the studies of Wertheimer and Wolff,[2] summarized in table 1.

These facts have been verified statistically in the Portland Infant Welfare Clinics, where breast feeding is especially emphasized. During the first three years of the clinics, among the 685 babies registered under 2 years of age, the mortality was 0.8 per cent, while the coincident city death rate for the same age group was 6.5 per cent. This contrast is well shown in figure 1.

Although many infants are unnecessarily deprived of their birthright from the very beginning, by far the greater number enjoy this privilege for a time. That the breast feeding period is too short in the majority of cases is demonstrated by the fact that in many communities not more than 15 per cent of infants are breast fed for nine months or more.

TABLE 1.—*Resistance to Disease in Relation to Type of Feeding in Infants* *

Infant	Average Duration of Illness in Those Recovering, Weeks	Death Rate, Per cent
Breast fed	0.5 to 1	0
Previously healthy bottle fed	2.5	19
Nonthriving bottle fed	3.8	40

* The duration of illness in breast fed babies is one fourth as long as in the bottle fed and the death rate incomparably less, according to Wertheimer and Wolff.

In previous papers we have presented some of the breast feeding problems affecting primarily the mother [3] and the new-born babe.[4] We shall now discuss difficulties developing in infancy subsequent to the new-born period. Those most frequently encountered after lactation is fully established may be classified into three groups: too much milk, "hypergalactia"; too little milk, "hypogalactia," and apparently unsuitable milk, or that which appears to disagree with the baby. The last group is so usually associated with one of the former two that it hardly demands separate treatment at this time.

In hypergalactia cases the mother secretes more milk than her baby needs. This burdens her unnecessarily and overtaxes the digestive powers of the infant. After a time he reacts against the extra work so unwittingly imposed. For a few days he has little inclination to nurse. When he again desires to do so, the supply may be diminished because of the inadequate stimulation. This condition frequently follows overfeeding during the first few weeks of life. Accurate weighings before and after nursing for a twenty-four hour period at least once a week are advisable for every young baby. If he is getting too much milk, the amount obtained may be

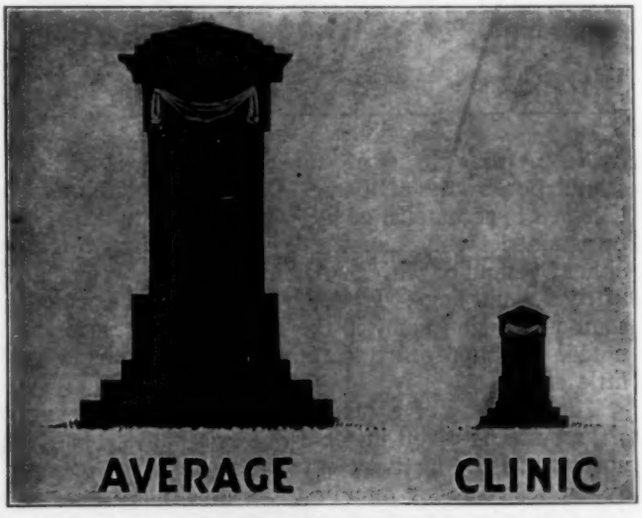

Fig. 1.—Among babies registered at the Portland Infant Welfare Clinics during a period of three years, the death rate was about one eighth of that for the city for the same time and age group.

reduced by giving only one breast at a time or by decreasing the number of feedings.

A marked case of hypergalactia is that of Baby P. He was brought in at 7 weeks of age weighing 4,470 Gm. (9 pounds 13 ounces). The birth weight was 3,300 Gm. (7 pounds 3 ounces). The mother complained that the house rugs were getting soiled by the large quantities of milk forcefully vomited by the baby. He was being given one or both breasts six times a day. Careful weighings showed that he obtained 14 ounces at a single feeding at 6 a. m., and a total of 45 ounces in a day. He was changed at once to four feedings and given only one breast at each nursing. The mother's liquid intake was greatly decreased. As shown in table 2, the daily milk secretion dropped to 22 ounces. The number of feedings was then increased to five a day, and the baby thereafter progressed normally. The problem was solved when the supply was regulated to the baby's needs. If uncorrected, this case would probably have developed later into one of hypogalactia and premature weaning.

Cases of hypogalactia, or too little milk, must be handled differently. Many mothers who have an abundance of breast milk while resting in the hospital find that the supply rapidly diminishes when they assume

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* Read before the Section on Diseases of Children at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

1. Pfaundler, M., and Schlossmann, A.: Diseases of Children, Philadelphia, J. B. Lippincott Company **3**: 71, 1912.
2. Wertheimer and Wolff, quoted from Lucas, W. P.: Modern Practice of Pediatrics, New York, Macmillan Company, 1927.
3. Moore, C. U., and Dennis, Helen G.: Breast Feeding Problems: I. Maternal, J. A. M. A. **87**: 1970 (Dec. 11) 1926.
4. Moore, C. U., and Dennis, Helen G.: Breast Feeding Problems: II. Newly Born, Internat. Clin. **4**: 112 (Dec.) 1926.

their usual home duties. Sometimes illness on the part of the mother or the recommencement of menstruation may cause a temporary diminution in the milk supply. Unless corrected this frequently becomes permanent, soon resulting in weaning. Frequently, too, the mother fails to realize the deficiency, and the resulting malnutrition is attributed to the quality rather than the quantity of the breast milk. Again the scales demonstrate the true condition of affairs. The problem, of course, is simply one of increasing the supply to an adequate amount. This is not the impossible task the older pediatric textbooks would have us believe. Given the maternal prerequisites of plenty of water, an adequate diet, sufficient rest and exercise, and proper nipple

TABLE 2.—*Effect of Hypergalactia on Infant*

Date	Breasts	Ounces per feeding	Total Ounces	Symptoms
10-14	One or both	14, 7½, 7½, 7½, 6½, 9¼,	45¼	Projectile vomiting of a large amount a. c. and p. c.
10-16	One	9½, 7, 6½, 7½	29¼	Spits up a mouthful p. c. Hungry in early morning.
10-18	One	8½, 6, 4½, 3	21¾	
10-19	One	7½, 5, 5, 5	22½	
11-1	One	7, 7, 5, 4, 7	30	Not hungry. Spits up one third of time. "Curds" in stool.
11-14	One	7½, 6½, 5½, 6½, 8	34	Spits up occas. p. c.
11-20 to 12-2			32-34	Vomiting cured.

hygiene,[3] the factor of superimportance is adequate stimulation of the mammary gland at regular intervals. The last is accomplished by having the baby nurse both breasts at least five times a day, followed by expression either by hand or with an Abt breast pump, immediately after the nursings. If this procedure is instituted as soon as any deficiency in the quantity of breast milk is noted, the supply may be suited to the demand with little effort.

The progress of a case of hypogalactia occurring at six months is given in table 3. The baby's birth was normal and the birth weight 3,400 Gm. (7½ pounds). When seen at four months the complaints given were, for the baby, constipation; for the mother, fissured nipples. These difficulties were soon overcome. The breast milk continued adequate and the gain normal until the mother's menses recommenced. The resulting hypogalactia manifested itself in the baby's stationary weight. In less than a month the condition was completely corrected by manual expression[5] after each nursing.

Compared with such cases which are treated early, the reestablishment of breast feeding in infants who have been weaned for some time is much more difficult. Frequently the baby fails to cooperate by refusing the breast. He has perhaps learned to prefer a sweet formula obtained with little effort from a bottle. It often becomes a battle of brains between the physician and the infant to overcome the baby's refusal of the breast.

After losing the struggle in a number of cases, we devised a plan of hoodwinking the infant. One end of a small rubber tube was attached to the nipple of an ordinary nursing bottle; the other end was placed beside the mother's nipple, so that when the baby was at the breast the end of the tube would lie in the corner of his mouth (fig. 2). The bottle was elevated just enough to allow the milk to flow only when some degree of suction was exerted by the infant. By this means a twofold purpose was accomplished. The breast was stimulated by the best and most natural means, and the baby was taught to depend on his mother for sustenance.

A typical experience is found in the following case: Baby C. was the sixth child of healthy parents. The birth was normal and the birth weight was 3,400 Gm. (7½ pounds). At 3 weeks of age he was weaned because of stationary weight and green stools. At 2½ months of age he came to us weighing 3,255 Gm. (7 pounds 2 ounces), markedly dehydrated and anhydremic. Emergency measures and a modified milk formula were given to combat the malnutrition. After a week, during which time the mother had been expressing her milk, the infant was put to the breasts, which he had not nursed for two months. He refused to take them. The "breast feeder" was brought into play with the desired result. However, if the supply through the "feeder" was cut off, he would stop nursing at once. A baby will nurse if his effort is successful, but not otherwise. With the feeder as the incentive he pulled so hard that the mother said, "He makes my breast burn." With the baby nursing thus for ten minutes on each breast, followed by an equal time given to manual expression, the breast milk gradually increased.

After two weeks he refused the bottle, preferring the breast and feeder. Two months later he was nursing without the feeder. When seen at 10 months of age he was still taking the breast and was considerably overweight.

Among the causes and excuses for premature weaning one frequently finds various types of enteral disturbances, such as colic, vomiting, green stools and diarrhea. Since breast milk is more easily digested than any artificial combination, our first thought should be, not weaning, but how to prevent it.

Baby H. illustrates the common problem associated with intestinal disturbances. The mother states that before she was out of bed the baby had severe colic and diarrhea. At 3 weeks of age these conditions were so bad that she substituted a bottle of modified cow's

TABLE 3.—*Hypogalactia, Corrected Early*

Date	Age, Months	Weight, Gm.	Breast Milk at 2 p. m. Feeding, Gm.	
12-11	5	6,620	220	
12-24		6,725	130	Mother's menses began five days before
1-7	6	6,720	80	Hypogalactia, expression begun
1-11		6,800	125	
1-22		7,040	140	
2-5	7	7,215	170	Expression stopped
2-16		7,490	195	

milk for the breast at alternate feedings. Four days later the baby was entirely weaned—the usual result. As no improvement was noted, the mother resorted to Eagle brand milk. The symptoms grew worse, resulting in seven or eight green stools daily containing mucus and "curds." At 4 weeks of age, after having learned to prefer a sweet-tasting food, the baby was brought to our clinic. Its weight was 3.925 Gm. (8 pounds 10 ounces) compared with a birth weight of 3,700 Gm. (8 pounds 3 ounces). It was given five feedings daily of a modified cow's milk formula no sweeter than breast milk, and the mother was taught the type of breast expression applicable to her spherical breasts. Two days later the baby obtained only 5 Gm. at the breast. The colic and diarrhea improved rapidly. After three

5. Moore, C. U.: Nutrition of Mother and Child, ed. 3, Philadelphia, J. B. Lippincott Company, 1927, chapter VII.

weeks the complemental feedings were discontinued. In another two weeks, the amount of milk secreted exceeded the child's needs. It was therefore necessary to reduce the amount by having the baby nurse only one breast at each feeding.

Parenteral diseases, such as pharyngitis, otitis, pyelitis and other extra-intestinal infections, may not be noticed or suspected by the mother until vomiting, green stools or stationary weight appear. The treatment of such a condition in the breast fed differs in no essential from treatment in a child past the nursing age. Moreover, if the child is on the breast the feeding problem is eliminated. When a babe is fighting disease germs is it not unwise to alter an ideal diet?

Infantile eczema is a common excuse for weaning. Weaning, however, often complicates the situation. Fats, sugars and proteins have each in turn borne the brunt of the blame. Blond babies and other thin-skinned types frequently have a constitutional tendency to this disease. Overfeeding alone in such infants is conducive to the development of eczema. The work of O'Keefe,[6] Shannon[7] and others has shown that some element in the diet of the mother may likewise be the causative factor. In our experience the protein skin tests, prepared with solutions made by the Hollister-Stier Laboratory, Spokane, Wash., give valuable information. Withdrawal of the antigenic proteins from the maternal diet usually clears up the condition.

Fig. 2.—The "breast feeder" in use: The bottle is held at such an elevation that the milk will flow only when the baby suckles properly. The feeder may be obtained from Altstock Fay & Co., Portland, Ore.

COMMENT

Life, health and proper development are all primarily affected by infant nutrition. Hence the maintenance of an adequate flow of breast milk throughout the normal nursing period should be the fundamental consideration in infant care. Whatever the disturbance may be, the physician's duty is to discover the cause of the trouble and make dietetic and hygienic adjustments to correct it. It is not necessary to call a physician to wean a baby; any neighbor can do that. The development of an adequate supply of breast milk or the reestablishment of a flow after premature weaning is perfectly possible if the physician and the mother are willing to make the required effort and practice the necessary perseverance. It is a well known fact that a young heifer frequently develops a considerable flow of milk if some calf of the herd is allowed to suckle her. We are told that virgin negro girls make good wetnurses, and that in India grandmothers often nurse their grandchildren. We ourselves have supervised two cases in which foster mothers who had never been pregnant developed milk in their breasts, through manual expression, until streams were easily expressed. With such examples before us, no physician need despair of the result of manual expression in cases of inadequate secretion or premature weaning. Any mother able to care for her child is also capable of nursing it.

6. O'Keefe, E. S.: Eczema in the Breast Fed Baby and Protein Sensitization, Boston M. & S. J. **183**: 569 (Nov. 11) 1920.

7. Shannon, W. R.: Eczema in Breast Fed Infants as a Result of Sensitization of Foods in the Mother's Dietary, Am. J. Dis. Child. **23**: 392 (May) 1922.

SUMMARY

1. The presence in breast milk of antibodies for human diseases merits more consideration.

2. Increased emphasis on breast feeding reduces morbidity and mortality.

3. The commonest breast feeding problems of the infantile period are hypergalactia and hypogalactia. Illustrative cases are given to indicate solutions.

4. Establishing or reestablishing a flow of breast milk is often complicated by the infant's refusal of the breast. A breast feeding device called the breast feeder has been developed which enables a baby to obtain complemental food while nursing at the breast.

5. Parenteral and enteral diseases are more permanently cured by keeping a baby on the breast than by weaning it.

6. A good rule to follow is that any mother who is well enough to care for her child is capable of nursing it.

Corbett Building.

ABSTRACT OF DISCUSSION

DR. F. W. SCHLUTZ, Minneapolis: The practitioner no doubt pays too little attention to instruction of the mother and to her environment. That often accounts for the failure of the mother to develop sufficient breast milk. If detailed attention is given to this factor, it is amazing what can be done. It is quite possible that the device Dr. Moore showed might be helpful in stimulating nursing interest on the part of the baby. I have always found that the biggest problem I had to deal with in practice was the baby affected with eczema. These infants always have intolerance, particularly to fat, and are the type of baby for whom the practitioner commonly advocates weaning. Strategy in this type of case consists in maintaining the breast secretion but reducing it at the time when the baby nurses. The reduction should never go below an ounce at a feeding. The complement should preferably consist of low fat mixtures. It is also important to remember that this type of child regains its tolerance for breast milk and at a later age can take much larger amounts with comfort. The secret of success lies not in weaning the infant but in reducing breast feeding for two or three months and then in returning the child to larger amounts of the breast milk as this tolerance is regained. It has been a common practice on the continent, and we have used it quite a good deal in the clinic at Minneapolis, to feed this type of baby solid food very early, along with the breast milk. The breast secretion is easily maintained. The result in the way of gain in weight and in the well being of the child is very gratifying.

HABITUAL DISLOCATION OF THE SHOULDER *

W. B. CARRELL, M.D.
DALLAS, TEXAS

The literature on recurring dislocation of the shoulder has been reviewed recently by Henderson [1] and by Speed [2] and will not be repeated in this paper.

In primary traumatic dislocation, the humeral head is thrust downward and forward, as the arm is hyperabducted. The capsule gives way along the margin of the glenoid rim between the subscapularis in front and the origin of the triceps on the posterior margin. From this position, the direction of force carries it forward beneath the coracoid process in 90 per cent of the cases.

Recurrence of dislocation follows excessive function or accidental hyperabduction of the arm before the torn capsule has had sufficient time to heal. Each succeeding dislocation is accomplished with greater ease, and the capsule finally becomes patulous and accommodates the head outside the glenoid cavity.

In a dissection of the anterior shoulder region three days after a recurring dislocation, I made a careful search for evidence of laceration, but the capsule presented only a voluminous mass of soft tissue attached to

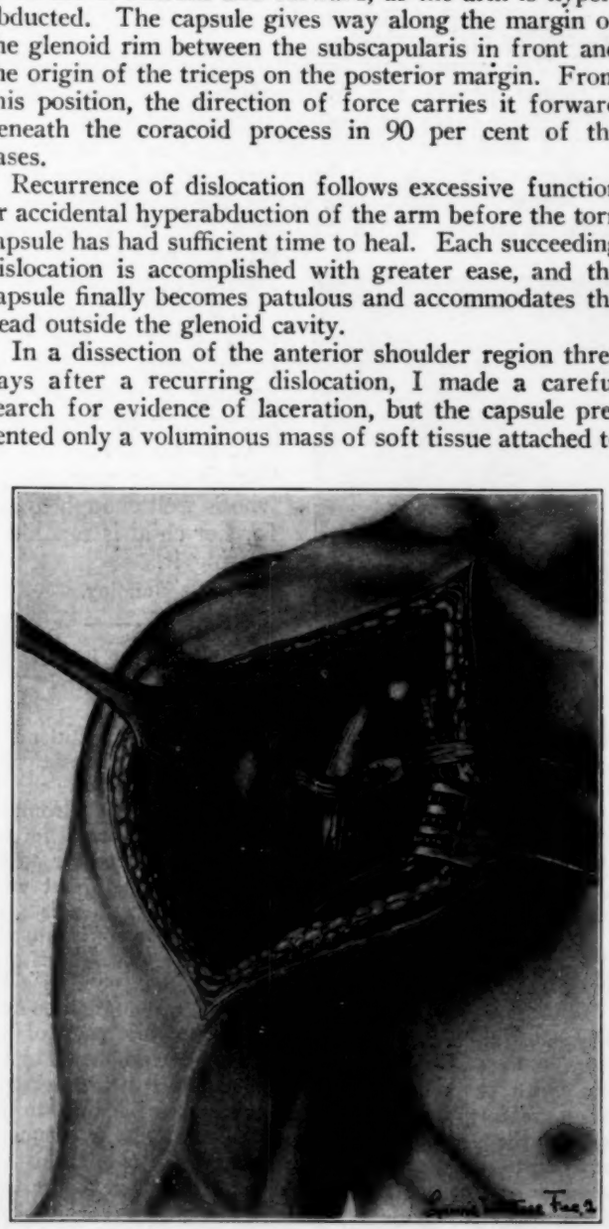

Fig. 1.—Fascial strip attached to proximal end of cut biceps tendon and distal end of latter sewed into coracoid head of biceps.

the glenoid and to the neck of the humerus. It would appear, therefore, that unless the observation were done soon after the primary injury, it would be difficult to determine the exact location of the laceration. My conclusion that it occurs at the glenoid margin is based on the mechanics of the force applied with greatest strain at this area. Supporting this hypothesis are observations in a relatively small number of cases in which the inferior rim was partly sheared away. In 1925, such a case was studied, showing not only a break

Fig. 2.—Introducing fascial strip through subscapularis and capsule under humeral neck to emerge on posterior surface.

through the inferior glenoid rim, but also a fracture of the acromion and complete avulsion of the supraspinatus attachment. The pathologic changes were in accord with the character of the injury sustained; namely, a sharp impact against the abducted arm.

In bilateral dislocations, and in those without a previous traumatic history, some authors have noted changes in the conformation of the humeral head having the appearance of congenital defects rather than compression effects, secondary to repeated displacements.

TREATMENT

As is true of so many orthopedic and other surgical conditions, the most important thing in treatment is prevention. If the primary dislocation is controlled by limiting the free use of the arm for a period of several weeks, with particular attention to abduction, the capsule will heal, and the shoulder recovers with complete function.

The reconstruction measures applied in recurring cases readily fall into two groups: first, those designed to swing the head to the scapula above and after the fashion of an anchor to prevent the downward excursion; second, those intended to prop or support from below. The latter is accomplished by some in the reefing operation on the capsule; by others, in bone operations on the glenoid. I am proposing an operation, to be described presently, to combine the two principles and utilize the advantages of each.

* Read before the Section on Orthopedic Surgery at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

1. Henderson, M. S.: "Tenosuspension" for Habitual Dislocation of Shoulder, Surg. Gynec. Obst. **43**: 18 (July) 1926.

2. Speed, Kellogg: Recurrent Anterior Dislocation of Shoulder, Surg. Gynec. Obst. **44**: 468 (April) 1927.

The reefing operations, as done by Thomas,[3] and in a more specialized manner by Keller,[4] are fundamentally sound because the object is to repair the rent in the capsule and restore normal tension. The difficulty is in bringing together structures with adequate strength to withstand the intensive strain incident to some modern activities. Among general surgeons, it is recognized that certain abdominal hernias cannot be successfully treated by the usual method of reefing the fascia, because the latter has become so thinned from repeated stretching that it would be impossible to make adequate restoration.

In this analogy confirmation is lacking in support of the claim made by Thomas that a second dislocation will stimulate the formation of more connective tissue and result in a firmer fusion than that following a primary repair. Few of us ever felt this optimism on seeing a recurrence following an operation for an inguinal hernia. The reefing operation, therefore, has limitations, and to meet these other methods have come into use.

Tenosuspension, described by Joseph and practiced by Plummer and Potts[5] and Henderson, designs to anchor the humeral head in such a manner that it cannot pass lower than the glenoid rim, even though all support from below were removed. Bennett[6] has recently modified the operation, placing the fascia through the anterior portion of the capsule and attaching it to the acromion.

Fig. 3.—Grasping fascial strip directly above teres minor.

The bone block operation, planned by Eden and modified in the detail of approach by Speed, has much to commend it. Should the graft remain viable and form a heavy spur of bone projecting from the neck of the scapula, it must surely arrest the wandering humeral head. It is somewhat analogous to the spur purposely formed on the superior surface of the os calcis, in the Campbell operation, in which I have not observed either absorption or irritation. One wonders, however, whether a ledge of bone, of the size described in the operation, would not occasionally produce irritation on an articular surface and lead to joint disability.

Fig. 4.—Fascial strip passed through drill hole in acromion process.

OPERATION USED BY AUTHOR

Following a failure from the tenosuspension operation two years ago, it occurred to me that a combination of reefing and suspension would have the greatest opportunity for success. It was done as follows: The biceps tendon was exposed through an anterior incision extending to a point one-half inch below the tendon of the pectoralis major. The biceps tendon was sectioned at the lowest level and reflected from its sheath up to the point where it emerges from the capsule. The distal end was fastened into the coracoid head of the biceps. A strip of fascia 6 or 7 inches long and 1½ inches wide was securely fastened to the free end of the biceps tendon. A posterior incision was then made, extending from the acromion downward on the posterior surface of the arm 4 inches. The deltoid was separated and the teres minor exposed. The biceps and fascial strip was now passed under the neck, penetrating the capsule, in and out, at two points; it was threaded on a special instrument fashioned like an aneurysm needle. The instrument hugs the capsule and emerges just above the teres minor, where it is secured through a drill hole in the acromion. The arm is dressed by the side, and motion is gradually resumed after three weeks with free action after ninety days.

REPORT OF CASES

CASE 1.—A husky boy, aged 20, gave a history of frequent attacks of epilepsy during which his shoulder had been dislocated twenty-five or thirty times. He has continued having

3. Thomas, T. T.: Habitual Dislocation of Shoulder, J. A. M. A. **85**: 1202 (Oct. 17) 1925.
4. Keller, W. L.: Ann. Surg. **81**: 143 (Jan.) 1925.
5. Plummer, W. W., and Potts, F. N.: J. Bone & Joint Surg. **7**: 190-198 (Jan.) 1925.
6. Bennett, G. E.: The Use of Fascia for the Reenforcement of Relaxed Joint, Arch. Surg. **13**: 655 (Nov.) 1926.

epilepsy since the operation, but the shoulder has not dislocated after two years.

CASE 2.—A girl, aged 19 years, had received a traumatic dislocation six months before admission, and during the succeeding four months the shoulder had been out six or seven times. During the last two months, it was out nearly every day unless the arm was kept bandaged by the side. On examination, an extreme deltoid atrophy and relaxation of the joint were found, and one could dislocate the shoulder to the subcoracoid position easily. After operation, the shoulder filled out and for eight months there has not been a recurrence; the patient uses the arm freely with only a slight degree of limited motion.

In both cases a slight degree of limitation of abduction and outward rotation has remained.

In two other patients, both football players weighing more than 200 pounds (91 Kg.), in whom other methods have failed, the operation has been too recent to permit a prediction of the outcome, apparently good after six months.

The loss of the long head of the biceps did not affect the function of arm flexion or supination, nor is any difference observed in the stability of the shoulder, as might be expected when the biceps tendon is cut. This is probably due to the fusion of the biceps tendon to pericapsular tissues on the superior surface and to its persistence as a shoulder ligament.

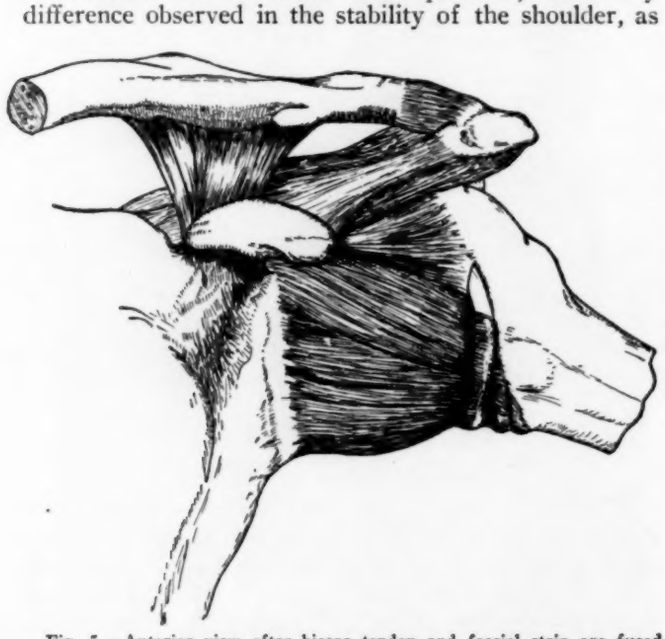

Fig. 5.—Anterior view after biceps tendon and fascial strip are fused with capsule. The resulting band of dense tissue tightens the capsule and suspends the head of the humerus.

SUMMARY

1. The operation described combines the principles of the suspension and reefing procedures.

2. The suspension element has the advantage of slinglike action, and anchors the head to the glenoid as well as to the acromion.

3. The reefing feature has the advantage of plicating a heavy band through a weak capsule, and the resulting fibrosis should leave a thick band encircling the neck and continuous with the suspension bands.

4. Ill effects have not been seen from changing the biceps origin.

5. The method is good for any type of dislocation.

6. No important structures are divided and the operation is easily done.

3701 Maple Avenue.

ABSTRACT OF DISCUSSION

DR. F. J. COTTON, Boston: This is a very ingenious and interesting way of getting at the problem. I think we ought to consider the reefing operation, properly done, as an operation for advancing a retracted subscapularis. I have found it perfectly satisfactory and permanent (with the exception of one case) in persons who had any muscle worth talking about. The subscapularis is a heavy muscle; it lies far back. It can be exposed easily enough by an anterior incision, and if it has any considerable bulk one can plan a reefing operation so as to carry it forward, so that the insertion into the capsule is over into the bicipital groove. In cases in which the subscapularis musculature is not good, one ought to consider an operation like that just described or the bone shelf operation which Dr. Speed described. If the capsule is merely relaxed, and the muscle has changed its position to what amounts to a lengthened tendon, one can do a reconstruction operation. If one cannot do that, then it becomes a question of slinging up the arm or putting in a shelf so that it cannot come forward.

DR. FRED H. ALBEE, New York: About twenty years ago I published a report of some cases treated by a method that Dr. Edward Burrell of Boston had used; that is, a reefing of the capsule. I have had only one recurrence following such an operation. The procedure which has been set forth here is ingenious. As for the possible untoward results of irritation from a bone graft shelf such as Dr. Speed described, I do not believe they need be feared, provided some of the capsule is well placed in between the bone graft and the articular surface of the bone shelf, which can be done very easily. I am not quite certain whether Dr. Speed has emphasized that or not, but I have done similar operations on joints in which the synovial membrane and some of the capsule has been drawn in between the bone shelf to prevent the rubbing of the articular surface of that portion of the joint with the shaft. The wedge graft for dislocation of the patella is similar. Changing the conformation of the articular surface of the joint is certainly a very potent and effective method if one can accomplish it. Of course, the glenoid cavity is not favorable, as it is not of a large size; to raise the articular surface, one would have to put in the strong peg which Dr. Speed has mentioned. Using so strong a substance as the tendon to reenforce the reefing as described is, I think, very ingenious and must be very effective.

DR. T. TURNER THOMAS, Philadelphia: What we need most is to overcome the difficulties of operation for this condition. The literature dealing with it has increased rapidly in recent years. Two factors have retarded progress in its use: the infrequency of the condition and the anatomic difficulties encountered in exposing the joint. Few surgeons have performed the operation, and most of these in only one case, so that important improvements in technic come slowly. No joint capsule in the body can be exposed easily and freely except that of the knee which does not require the capsule operation. Every joint capsule is very limited in area and covered completely by adherent muscle, often in several layers, and sometimes crossing each other more or less obliquely. The long used deltopectoral route is employed by most surgeons but has its difficulties, as is indicated by its numerous modifications. Nearly twenty years ago I first exposed the capsule through the axilla and have now operated in sixty-one cases, three for posterior dislocations and fifty-eight for anterior, every one of the latter by the axillary route. I modified the operation after the first ten cases but not since. The circumflex nerve must be guarded against injury. It cannot be felt or seen when one comes directly on it because it is covered by a dense fascia which must be picked off carefully by forceps before the nerve can be seen. It must first be visualized, freed and retracted, and placed in the care of an assistant who should be held responsible for its safety during the remainder of the operation. I would emphasize the statement that one capsule operation can be made to cure the condition in nearly all nonepileptic cases; that a dislocation may follow operation but can be used to complete the cure with the cooperation of the patient; that such a dislocation, if it can occur, is needed to bring the strength of the

joint up to the normal, and that it can be used more effectively in doing this than can another operation. This is true because the capsule tear resulting from the postoperative dislocation, not from a preoperative recurrence, occurs in the weakest part of the capsule and the reparative cicatricial tissue is placed just where it can do the most good. In my opinion, a capsule operation will cure most cases of epilepsy, but if it fails a bone operation will complete the cure. This may be a high excision of the humeral head, a reshaping of the glenoid cavity or the bone graft operation of Dr. Speed which I have not had the opportunity of employing but think a better operation than either of the preceding two. In the last five cases I used a crucial incision of the capsule with overlapping of the corners obliquely, thus contracting the capsule in all directions, the resulting cicatricial tissue being increased and placed where it would do the most good. There have been no recurrences in any of the five shoulders thus operated on, the first one two years ago in a professional heavy weight prize fighter who has since engaged in several professional fights. Two others were hard working men and two were athletes.

DR. EDWIN W. RYERSON, Chicago: The fact that so many different types of operation have been proposed and carried out for the relief of recurrent dislocation of the shoulder is

Fig. 6.—Posterior view: final result after fusion; fascial strip attached to acromion process.

evidence that no one operation is uniformly successful. Years ago I performed several of the capsule reefing operations of the different types and had such a large percentage of recurrence that it seemed to me that the principle, as I endeavored to carry it out, was possibly not the right one. The operation devised by Dr. Carrell resembles very closely the Clairmont-Ehrlich operation which was described a number of years ago. That seemed to me to be a rational attempt to sling up the head of the humerus, and I performed six of those operations. In only one case has there been a recurrence. It is a more difficult operation to perform than the one proposed by Dr. Carrell. Dr. Carrell cuts the long head of the biceps, which theoretically is, perhaps, not advisable. I do not think it wise to interfere with the normal mechanism of the joint if one can avoid it. I would suggest that Dr. Carrell could attain the same ends by making the entire loop from a strip of the fascia lata; it could be attached above at the upper part of the glenoid and be carried underneath after interweaving it with the capsule, which, in my opinion, is the strong point of the operation. The interweaving into the capsule is sound. It strengthens what we all admit is a weak capsule. The bone peg operation does not seem to me to be founded on a rational theory of the pathologic conditions present, because the glenoid cavity is so very shallow, almost as flat as a saucer, that it is inconceivable to me that the shape and the slight hollow of the glenoid fossa has much, if anything, to do with the retention of the head under a stress. I therefore prefer Dr. Turner Thomas' method. I have tried his posterior axillary incision in only one case, and it was to me difficult and rather awe-inspiring. I did not feel competent to do the dissection in the way that he has outlined. It seemed dangerous to me, so that my capsule operations were done by the anterior route, which admittedly gives only a poor access to the capsule. I also approve of the operation which Dr. M. S. Henderson described a year or so ago, which consisted of putting a loop through the acromion and through the greater tuberosity—a loop either of rolled fascia lata or, perhaps less advisedly, the tendon of the peroneus longus. It is vastly easier to do and it seems to me a little more rational. The excursion of the head of the humerus downward and forward would not be entirely prevented by the loop from the acromion to the tuberosity, but the complete dislocation I believe would be prevented. So it is my present intention to attempt Dr. Henderson's operation in the next cases.

DR. J. W. SEVER, Boston: It seems to me that the theory of the mechanics of the recurrence of dislocation is being overlooked. We are trying to lock the stable door after the horse is gone. If the muscles are taken away, as in this operation of Dr. Carrell's, which are active and potent in keeping the head of the humerus in the glenoid (which is after all what is wanted, as one does not want to disturb the function of the muscles) there will be destruction, to a certain extent, of the muscles which may bring about the ultimate cure. Dr. Ryerson suggested a loop of rolled fascia lata or the tendon of the peroneus longus. I often wonder, as I read the description of all these various operations, how much the trauma, how much the dissection and the eventual deposition of a lot of scar tissue must affect the ultimate result. It is the scar tissue and the trauma, and not, perhaps, the actual method of mechanical operation, that is going to give the eventual result. Dr. Young of Philadelphia devised an operation which I believe is mechanically sound. He divides the pectoralis major and the latissimus dorsi, and pleats the capsule. If that is done, the subscapularis, which, of course, is an internal rotator, shortened, and the pectoralis major left perfectly free and divided completely, what little is lost from the section of that muscle will not amount to anything, from the standpoint of function, and is going to prevent redislocation of the head of the humerus. The simpler any operation can be made, by studying and using the mechanics of the active muscles about the shoulder joint, the better will be the results. I have operated on a good many patients by that method and have never had a recurrence. I have often wondered whether it is not the scar tissue, as a result of all those elaborate procedures which are not really based on mechanics, that gives results.

DR. J. T. RUGH, Philadelphia: I want to endorse what has been said by the last two speakers. In 1912, Dr. Oscar H. Allis of Philadelphia first called attention to the importance of the pectoralis major and the latissimus dorsi in their relation to the deltoid in the production of recurrent dislocation of the shoulder. Since the attachment of the deltoid is lower on the humerus and shortening of the pectoralis major and latissimus dorsi are so commonly present, as the arm was drawn outward, these muscles, after the capsule has been torn, constantly produce a recurrent dislocation, and it was Dr. Allis who first advised a section of these muscles for the correction of this condition. Dr. Young was the first one to do it in the live subject. I feel very much as Dr. Ryerson and Dr. Sever do regarding interference with the capsule of the joint, realizing that some cases are encountered in which the more elaborate operation must be done, but I have been surprised at the results, in the last five or six operations which I have done, from simple section of the pectoralis major and of the latissimus dorsi tendons. I have anesthetized the patient with the idea of doing a capsule operation and when, under an anesthetic, the arm was abducted, the tension of these muscles was so great that a section of the tendons was all that was necessary to relieve the subsequent

dislocation of the humerus. We all know that if a ligament is freed of strain, it will contract, and if the pulling of the head of the humerus away from the glenoid is presented, the capsular ligament will contract in the vast majority of cases.

DR. W. B. CARRELL, Dallas, Texas: I appreciate that it is not desirable ever to destroy the valuable muscle, but ours was a desperate case. We planned first to expose the biceps and to attach a big piece of fascia to the biceps at its upper emergence from the capsule, but on exposure we concluded that it would give a more direct swing to the glenoid and a firmer support if pulled directly downward rather than if attached to the muscle in place. In that case we watched the results, and found that there was no appreciable reduction in the strength of the biceps, and that the function was restored, so we have in subsequent cases done the same thing.

A RELATION OF CARDIOVASCULAR DISEASE TO HEMIPLEGIA*

LOUIS FAUGERES BISHOP, M.D.
NEW YORK

There is no condition that so quickly transfers a patient from the care of one specialist to another as the onset of hemiplegia in cardiovascular disease. Up to the time of the onset of this complication there is no question that the treatment of the person is a problem for the heart specialist. After the onset of hemiplegia, no one would question that he has passed into the domain of the neurologist. The rôle of the cardiologist up to this time is the prevention, or at least the postponement, of this complication that is always on the horizon.

In the first five years of my practice after leaving the hospital I was closely associated with neurology in that department of the Vanderbilt Clinic. In this busy institution I saw many hundreds of examples of hemiplegia in all its stages, and from every different cause. Later, I spent a period in general practice and in general hospital work with an ambulance service that

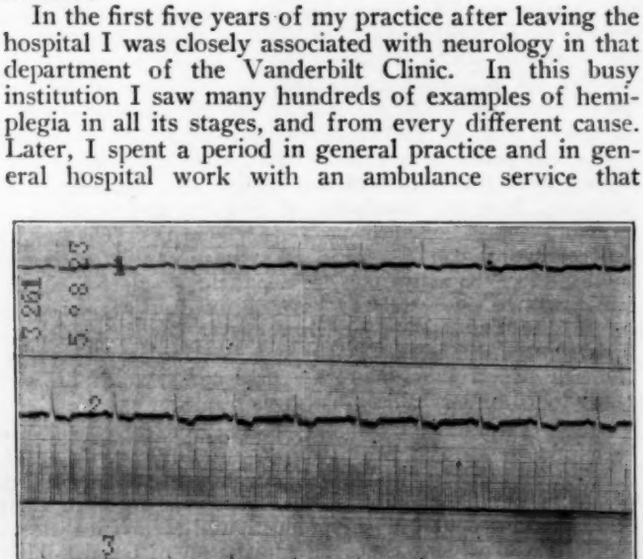

Fig. 1.—After coronary attack but before attack of hemiplegia.

supplied much experience with apoplectic subjects. About fifteen years ago I abandoned all other work to devote myself to cardiology. So I am in a position, in a way, to be a good liaison officer between the cardiologist and the neurologist.

There are three common causes developing hemiplegia in the course of cardiovascular disease: embolism, thrombosis and rupture of a blood vessel. Their comparative frequency is a question for the pathologist.

* Read before Section of Neurology and Psychiatry, New York Academy of Medicine, Feb. 8, 1927.

There is an interesting relation between angina pectoris and hemiplegia. Both of these conditions are ordinarily due to lesions in the blood vessels supplying the organs involved, and the causes that lead up to disease of the arteries in the brain and disease in the arteries of the heart are the same. Indeed, three times I have encountered persons who, within a few hours, had distinct evidence of an interruption to circulation in the artery supplying the pyramidal tract in the brain and the artery to the transmission bundle in the heart. In other words, they had had simultaneous attacks of hemiplegia and angina pectoris.

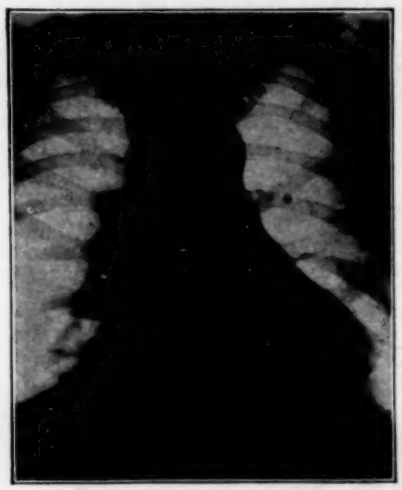

Fig. 2.—Condition in 1923, before attack of hemiplegia.

From the point of view of preventive medicine in searching out and applying those hygienic measures which can avert or prevent one disease or the other, about the same regimen and the same treatment are found advisable.

The relation of cardiovascular disease to hemiplegia in those nine cases out of ten that are not due to primary disease in the brain is that of cause and effect, and after the accident has occurred the treatment still remains at least a 50 per cent cardiovascular problem.

In those examples of hemiplegia, either transient or chronic, that come under the care of the cardiologist, little has been gained by emphasis of the neurologic problem, while much improvement has often resulted from the fundamental treatment of the arteriosclerosis and cardiosclerosis that usually go with it.

Among the reasons for a desire on the part of the cardiologist for a better understanding with the neurologist is his desire to obviate the suspension of all those measures that had been instituted for a long period of time to maintain the healthfulness of the cardiovascular system, as may happen because of the predominance for the time being of the involvement of the nervous system. What the cardiologist would like to impress on the neurologist is his belief that hemiplegia is the end-result of a degenerative process in the blood vessel and not merely a mechanical accident. The emphasis of the mechanical idea has led to a fear of exercise in the prevention of hemiplegia, and the too long postponement of exercise after its occurrence has been founded on an inordinate fear of the harmful effects of high blood pressure. But I venture to assert, and I do not believe any experienced man will deny it, that those patients with hemiplegia have done best in the way of restoration if they promptly attained and continuously maintained a compensatory high blood pressure, while those who remained of the asthenic type with low blood pressure and a general softness of all the tissue were the ones who degenerated much more rapidly. The so-called leaking heart was the bugaboo of the past generation, but it no longer worries the modern cardiologist very much. The leaking blood

vessel has inspired an infinite amount of fear and timidity of its consequent disadvantages in the restoration of health.

While one can never escape from the fear of sudden accidents in cardiovascular disease, nevertheless the more experience one has the more one dreads the certain death that follows the gradual deterioration of bedridden, overfed and overdrugged patients. Weir Mitchell and his school have contributed much to medicine and to therapeutics, but

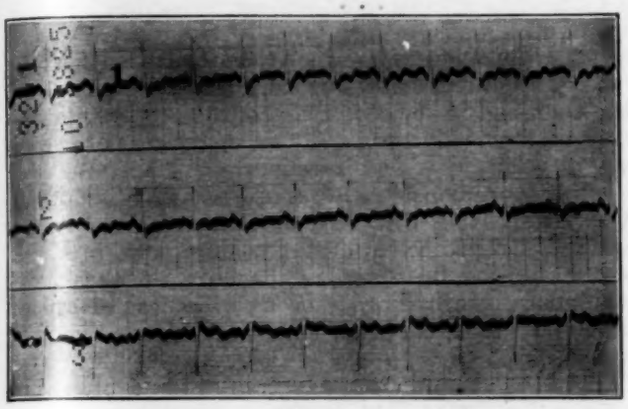

Fig. 3.—Following an attack of hemiplegia.

the abuse of the rest cure in organic disease, to my mind, has been an evil inheritance of this idea. Forty years ago all American medicine centered around the idea of rest, and it took a strong influence from Europe, with its cure resort experience, to counteract it. But we hear again and again, from one quarter or another, that rest is the great remedy for all injury to the heart and in all injuries to the brain.

I have spoken of the analogy between coronary disease of the heart and disease of the blood vessel supplying the pyramidal tract and the motor area of the brain in apposition to it. In coronary disease of the heart it is my policy with regard to this accident in patients who have had a definite apoplexy of the heart, as it might be called, involving excruciating pain of hours' duration, functional failure of the heart and everything that pertains to the classic picture of coronary disease, to instruct them, after a reasonable amount of rest, that exercise must be begun.

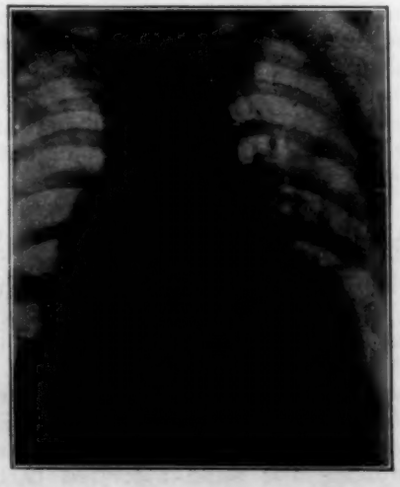

Fig. 4.—After the development of hemiplegia.

Much sooner than I would have dared to do years ago I start these patients on graduated exercises, teach them the use of glyceryl trinitrate symptomatically to relieve pain, and I try to build up in every way their physical strength and improve their general physiologic condition. Under this plan I have seen many restored to a useful, though, of course, restricted life, who, I am sure, under the old idea that rest treatment must continue until the tendency to pain disappears, would have drifted into a life of chronic invalidism.

I have the more courage to pursue this policy because I visualize blood vessel disease as inflammatory and degenerative rather than mechanical. The sudden and severe accidents that can be traced to mechanical blood vessel injury from reasonable degrees of exertion are so few that I believe we should discount them in the face of the vast benefit that comes to the whole group from the policy of the early resumption of activities.

The following is a report of a patient who developed hemiplegia coincident with angina pectoris.

REPORT OF CASE

B. F. H. L., a man, aged 58, came under my care in May, 1923, and gave a typical history of coronary disease, having been seized with severe pain, which pursued the usual course and was followed by pain on exertion. On a strict regimen, having been educated to the proper use of glyceryl trinitrate, he was able to resume his occupation as a jeweler. The conditions found at that time are illustrated in figures 1 and 2.

In August, 1925, he suffered an attack of left hemiplegia during a mild attack of angina pectoris. Following the attack of hemiplegia his blood pressure, which had averaged during the previous two years about 170, subsequently averaged about 190. The change in the electrocardiogram (fig. 3) during these two years is interesting as showing the development of left ventricular preponderance and improvement in the transmission through the bundle.

No change has been made in the general policy of this man's regimen and he has gone on since then, leading a very guarded existence. Other than the general increase in the level of the blood pressure he remains about the same, except that he has recently become somewhat aphasic.

109 East Sixty-First Street.

STUDIES IN THE ETIOLOGY OF BRONCHIAL ASTHMA *

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[EDITORIAL NOTE.—This paper, together with the papers of Drs. Wilmer and McGinnis, which follow it, conclude the symposium on bronchial asthma. In our last issue we published the five papers by Drs. McLaughlin, Clarke, Stout, Manges and Hawley, and Clerf.]

In these studies I limited myself strictly to bronchial asthma, or the so-called idiopathic or essential bronchial asthma. Cases of asthma due to sensitization to animal proteins, excretions and secretions were excluded. Likewise, individuals sensitive to pollens, plant proteins and foodstuffs were eliminated. Most of the cases studied came from Dr. H. B. Wilmer's Asthma Clinic at the Presbyterian Hospital.

All these patients had chronic infections either of the bronchi or sinuses, or both, with varying amounts of mucopurulent secretions. Many of them were more comfortable and some were entirely free from asthma during the summer months, when their respiratory infections had subsided temporarily. With the onset of cold weather and the prevalence of upper respiratory infections, the asthmatic condition invariably became aggravated. This was always coincident with an increase in mucopurulent bronchial or nasal secretions. The relationship between the asthmatic attacks and the respiratory infections was unmistakable.

* The funds for this work were supplied by Miss Anna K. Stimson.
* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

Rosenau and Anderson,[1] Walker [2] and others have shown that it was possible to sensitize animals to bacterial proteins, and naturally one would suspect the bacteria and their proteins present in the bronchi or sinuses during the infection were the cause of asthma. Undoubtedly some cases fall in this group.

It has been found on repeated bacteriologic studies of bronchial secretions from the same patient that the bacterial flora varied from time to time while clinically the case did not show any change and asthma and bronchial secretions persisted. Autogenous bacterins administered even in large doses to asthma patients with the object of clearing up the bronchitis did not,

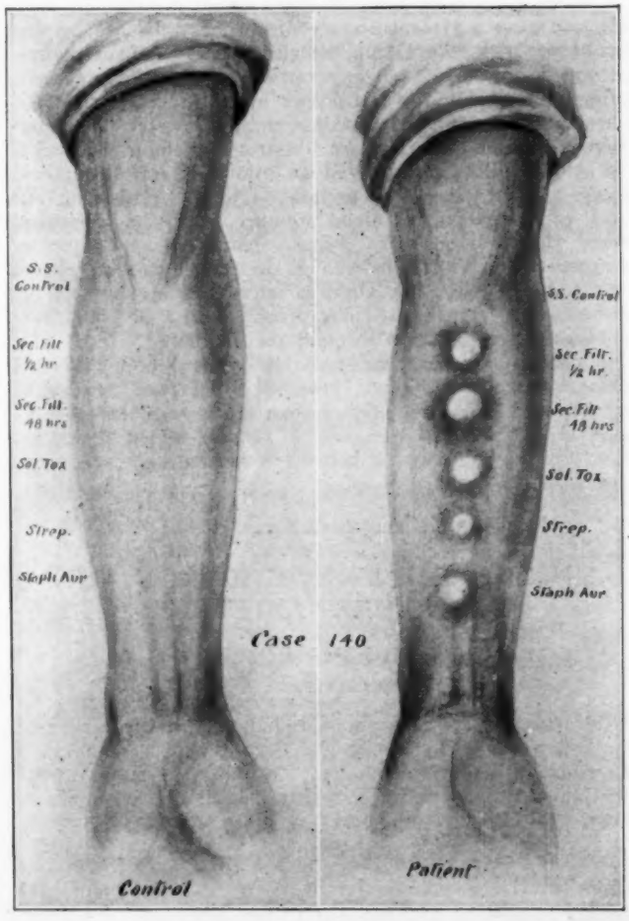

Fig. 1.—Control subject shows negative reactions to all preparations. Patient shows positive reactions with secretion filtrates, soluble toxins, streptococci and Staphylococcus aureus: *S. S. Control*, salt solution control; *Sec. Filt.*, secretion filtrate; *Sol. Tox.*, soluble toxins.

as a rule, bring on attacks of asthma. This, most likely, would have been the case if these patients had been sensitized to bacterial proteins. Arguments based on the results of skin tests have been presented in favor of bacterial protein sensitization. But skin tests with bacterial proteins are very misleading and very difficult to interpret, and toxic reactions are often mistaken for allergic reactions unless control tests are carried out at the same time on a normal individual.

All the cases studied had one factor in common, namely, mucopurulent bronchial secretions or pus in the sinuses. Whenever there is infection there is naturally a reaction in the infected tissues. In bronchitis there is congestion of the vessels in their walls, secretion of excessive amounts of mucus, and exudation of cells and plasma. The secretions and exudate are gotten rid of rather efficiently as long as the cells lining the bronchi remain comparatively normal. In many cases, sooner or later, the mucosa of the bronchi suffers severely, and exudate remains in the bronchi for some time.

Some of the secretion proteins or their split products and bacterial proteins may become reabsorbed through the injured walls of the bronchi, and thereby bring about sensitization of the individual to his own secretions. If the bronchitis persists, formation of exudate keeps up, and if some of the proteins are again reabsorbed asthma will result. A similar sequence of events may develop in sinus infections. As soon as the bronchitis or sinusitis clears up, asthma disappears. It seems probable, then, that an asthmatic person may become sensitized to his own exudate proteins. These proteins during their stay in the bronchi either have undergone some hydrolysis or have been acted on by bacteria or their enzymes, and have become "foreign proteins."

METHOD OF INVESTIGATION

Secretions of bronchi or pus from the sinuses of patients with asthma were taken, diluted with sterile saline solution, 1:4, shaken with beads and passed through a Berkefeld filter. Filtrates were prepared at once, after twenty-four and up to ninety hours, depending on the quantity of material available. The diluted secretions were kept at room temperature. The filtrates were placed in rubber capped bottles and tested for sterility. They were designated as "secretion filtrates."

These filtrates showed from 6 to 7 mg. of nitrogen per hundred cubic centimeters, but heat coagulable proteins were not present. An attempt was made to sensitize guinea-pigs. Five out of six guinea-pigs showed only moderate respiratory difficulty, sneezing and scratching of the nose. These symptoms appeared in about five minutes after intracardiac injection of the toxic dose of filtrate and disappeared in about thirty minutes. These filtrates contained mainly split products of the secretion proteins, some autolyzed bacteria and their soluble toxins.

A small amount of secretions, about the size of a pea, was placed in about 20 cc. of saline solution plus 1 per cent dextrose, incubated for forty-eight hours and passed through a Berkefeld filter. The filtrate was placed in rubber capped bottles which were labeled "soluble toxins." By the micro-Kjeldahl method this filtrate showed from 1.6 to 1.8 Gm. of nitrogen per hundred cubic centimeters, but no heat coagulable proteins. This preparation contained mainly soluble bacterial toxins, some split products of secretion proteins and some autolyzed bacteria. Out of six guinea-pigs, only one showed slight transitory bronchial spasms after intracardiac injections of the toxic dose.

At the same time cultures were inoculated, all pathogenic bacteria isolated, and bacterins prepared.

Intradermal tests were carried out on the patients with "secretion filtrates," "soluble toxins" and bacterins. The concentration of bacteria was 500,000,000 per cubic centimeter in salt solution. Tests were carried out with hemolytic and nonhemolytic streptococci, *Streptococcus viridans*, pneumococci, *Bacillus influenzae*, Friedländer's bacillus, *Micrococcus catarrhalis*, *Staphylococcus aureus* and *albus*, and *Micrococcus tetragenus*.

1. Rosenau, M. J., and Anderson, J. F.: Further Studies upon the Phenomenon of Anaphylaxis, J. M. Research **21**: 1-19, 1909.
2. Walker, I. C.: Studies on the Sensitization of Patients with Bronchial Asthma to Bacterial Proteins as Demonstrated by Skin Reactions, J. M. Research **35**: 487, 1907.

REACTIONS

Three types of reactions were observed as follows: (1) positive reactions to "secretion filtrates" and "soluble toxins" but not to bacterins; (2) positive reactions to "soluble toxins" and bacterins but not to "secretion filtrates"; (3) positive reactions to "secretion

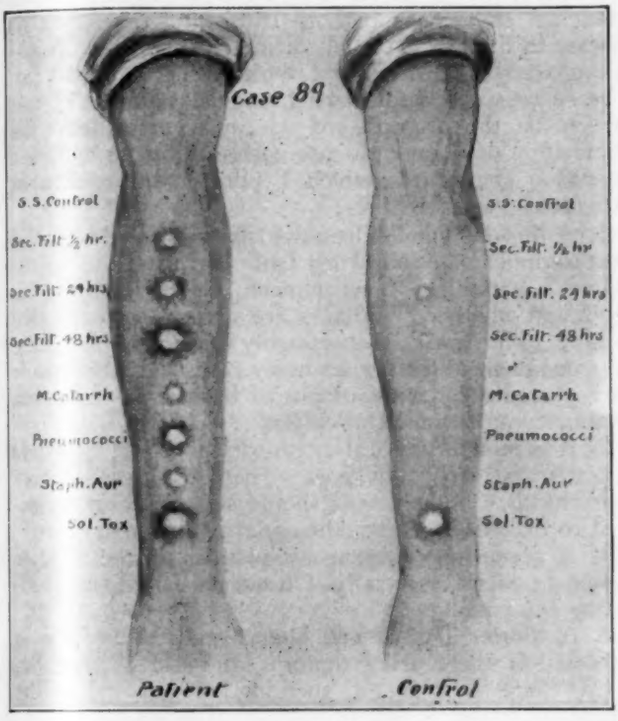

Fig. 2.—Control subject shows negative reactions with all preparations except soluble toxins. Hence, soluble toxin reaction in patient is toxic; other reactions are allergic.

filtrates," "soluble toxins" and bacterins. Wheals and hyperemia appeared in a few minutes after intradermal injections of 0.1 cc. of the preparations, and increased in size for about one hour and then began to fade. In some cases the hyperemia persisted for forty-eight hours. In four cases asthmatic attacks developed in about one hour following the intradermal injections.

Positive Intradermal Reactions in Eighty-Six Patients and Controls

Positive Reactions to	Positive Reactions in Patients		Positive Reactions in Patients		Allergic Reactions in Patients, per Cent	Toxic Reactions in Patients, per Cent
	Number	Per Cent	Number	Per Cent		
Secretion filtrates..	82	95	16	18	77	23
Bacterins.....	83	96	72	83	13	87
Soluble toxins.....	86	100	83	96	4	96

If parallel intradermal tests on normal individuals had not been carried out, the interpretation of these reactions would have been difficult; in fact, impossible. When both the patient and the control individual gave positive reactions to the same preparation, the reaction was considered to be toxic. Only when the patient reacted positively and the control gave a negative result were the reactions considered to be allergic. The accompanying tabulation of reactions shows that by means of control tests on normal persons the percentage of allergic reactions with "secretion filtrates" was reduced from 95 to 77, with bacterins from 96 to 13, and with "soluble toxins" from 100 to 4.

When positive reactions were obtained with any or all preparations, they were used to treat the patient. Preparations giving allergic reactions were used to desensitize patients, and preparations giving toxic reactions were used to produce antibacterial or antitoxic antibodies. The intradermal tests gave a rough indication of dosage. It was found safe to start treatment with that amount of "secretion filtrate" or "soluble toxins" which had produced an area of hyperemia not larger than 2 cm. in diameter after intradermal injections. The dosage was gradually increased, but systemic or severe local reactions were avoided. In my series asthmatic attacks developed in fifteen cases within from one-half to one hour following subcutaneous injections of "secretion filtrates." Necrosis at the point of injection was not observed.

I found that the ideal time interval for the administration of "secretion filtrates" was every fourth day, alternating with subcutaneous injections of "soluble toxins" and bacterins, so that the patient received one injection every other day. "Soluble toxins" and bacterins may be administered together on the same day.

COMMENT

The administration of the filtrate must be regarded only as a symptomatic treatment of asthma. The main object in the treatment should be the elimination of infections; autogeneous bacterins and "soluble toxins" should be used to help to clear up bronchitis. When the "secretion filtrates" alone were used twenty-eight out of fifty-six cases were relieved; eighteen cases were improved, and ten cases did not show improve-

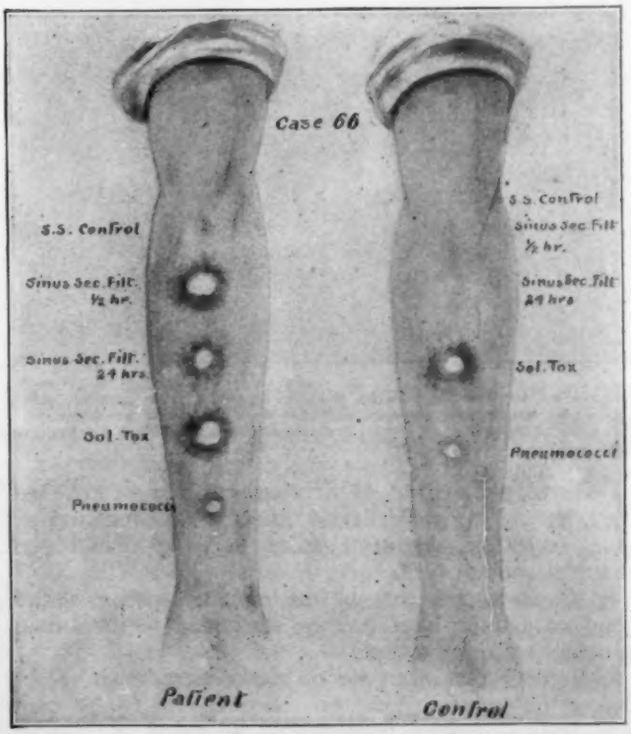

Fig. 3.—Control subject shows positive reactions with soluble toxins and pneumococci; hence, reactions with secretion filtrates in the patient are allergic, but reactions with soluble toxins and pneumococci are toxic: *Sinus Sec. Filt.*, filtrate from mucopurulent secretions from maxillary sinus.

ment. When "secretion filtrates," "soluble toxins" and bacterins were employed, fifty-four out of eighty-six cases were relieved; eighteen cases were improved, and fourteen cases did not show improvement. Most of

these cases were treated by Dr. H. B. Wilmer, who will report in greater detail concerning the clinical features.

Koessler, Lewis and Walker [3] have shown that bacteria contained in bronchial secretions, empyema fluid, tonsils and other foci of infection, when grown in blood-broth-glycerol-amino-acid medium, formed substances that caused bronchial constriction in the living pithed guinea-pig. It is very likely that in the cases in my series which did not show improvement, asthma was caused by bacterial poison action on bronchial muscle.

SUMMARY

1. Essential bronchial asthma is associated with chronic bronchitis or sinusitis or both.

2. Seventy-seven per cent of the patients tested intradermally gave positive allergic reactions with Berkefeld filtrates of their bronchial or sinus secretions.

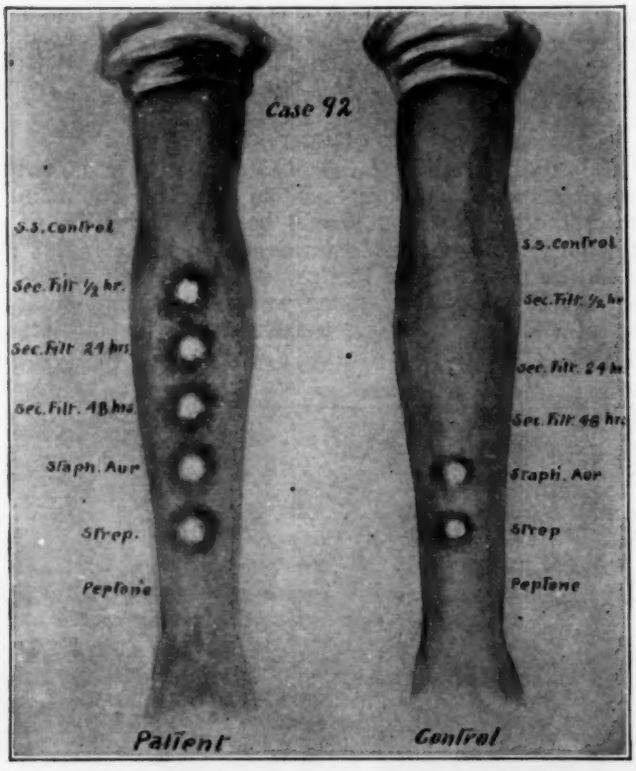

Fig. 4.—Control subject shows positive reactions with Staphylococcus aureus and streptococci; hence, reactions of patient with Staphylococcus aureus and streptococci are toxic, but reactions with secretion filtrates are allergic.

3. Twenty-eight out of fifty-six cases were relieved when treated with Berkefeld filtrates of bronchial or sinus secretion; eighteen were improved, and ten remained unimproved.

4. About 50 per cent of the patients with essential bronchial asthma have become sensitized to their own bronchial secretion proteins.

5. In order to interpret correctly intradermal reactions with "secretion filtrates," bacterins or soluble bacterial toxins, control tests should be made on normal persons.

Presbyterian Hospital.

3. Koessler, K. K.; Lewis, J. H., and Walker, Jenny A.: Pharmacodynamic Action of Bacterial Poisons, Arch. Int. Med. **39**: 188-213 (Feb.) 1927.

Human Being Cannot Be Divided.—We have not to build up a body nor a soul, but a human being, and we cannot divide him.—Montaigne.

STUDIES IN THE TREATMENT OF BRONCHIAL ASTHMA*

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PHILADELPHIA

There is no disease more mysterious and elusive than bronchial asthma, as to both cause and cure, and no disease in the practice of medicine requires more painstaking study if a partial or complete relief is hoped for. The successful treatment of bronchial asthma depends largely on the diagnosis of its cause, or at least the elimination of organic disease with dyspnea or dyspneic attacks. The course which I pursue and find most satisfactory is as follows:

1. A thorough and exhaustive history should be taken because much can be learned from the history as to the patient's habits, his environment, his occupation, his food, and whether his attacks are seasonal or perennial in type. He should be thoroughly questioned as to the previous medical history, as many cases of asthma have been preceded by acute attacks of bronchitis, influenza, pregnancy or chronic thyroidism.

2. A complete physical examination should be made in order that cardiac dyspnea or nephritic dyspnea may be excluded, and the thorax should be thoroughly examined to exclude mediastinal neoplasms or aneurysms.

3. A complete roentgen-ray picture of the sinuses should be taken, especially if headache is the predominating symptom.

4. A thorough nasal and pharyngeal examination is indicated if there are symptoms of nasal obstruction, or if there is constant sneezing accompanying the attack.

5. If the case is an extremely obscure one, a complete blood analysis must be done. In several instances a high blood sugar and high blood urea have been found, denoting the beginning of organic diseases, and on the institution of proper treatment a complete alleviation of the asthmatic symptoms was experienced. The blood calcium should be estimated in all cases, as a low blood calcium is extremely significant.

6. Last, but not least, a thorough cutaneous test, with all proteins and all pollens, should be performed. The bacterial proteins I have practically discontinued using, because I have found them in many cases unreliable and misleading. However, occasionally I have made cultures of the separate organisms found and recovered from the sputum, and I have tested with these organisms, with the result that positive reactions have been seen. If a case does not react to any protein or pollen after repeated tests, it has been my practice to classify that case as bacterial until proved otherwise. Here let me emphasize the importance of a thorough cutaneous test. I feel sure that many patients operated on for deflected septum, polyps, enlarged ethmoids or submucous resections could have been spared these operations and better results have been obtained had a thorough cutaneous test been performed. It would be a presumption for me to suggest in what types of cases operation is indicated, but I do feel that any one who is suffering from bronchial asthma should not be operated on until an exhaustive examination has been done and a thorough history has been taken.

After I have eliminated all organic disease and have definitely found the case positive after complete testing,

* Read before the Section on Laryngology, Otology and Rhinology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 20, 1927.

it is my procedure immediately to eliminate the offending protein and place the patient under observation for return of symptoms. If the condition is not relieved, specific desensitization is carried out. If relief or temporary relief results, the patient is then observed. If there is no marked improvement, a stock vaccine is administered. By the time this vaccine has been given, the autogenous vaccine has been prepared and is now ready for administration.

PREPARATION OF VACCINE

The autogenous vaccine is prepared as follows:

Sputum.—Carefully select from a fresh sputal mass some thick mucopurulent material and wash thoroughly in three or four changes of sterile physiologic sodium chloride solution in Petri dishes. After the last washing transfer a portion the size of a wheat grain to a hemoglobin agar plate and spread in sections so as to have increasing dilutions on the plate. That is, gently spread the sputum with the aid of a platinum spatula over about one fifth of the plate surface, stroking over and over again until the mass is well and equally spread. Sterilize the spatula. Spread a small portion of this fifth over another fifth, using the same care to get an equal distribution. Sterilize the spatula. Repeat from the second fifth to the third fifth, and so on, thus making five dilutions on the plate. This is done because different specimens contain varying numbers of viable organisms, and it is necessary that some part of the plate shall have few enough organisms present that their cultural characteristics shall be easily differentiated. Make two smears of the washings. Stain one for tubercle bacillus, the other by Gram's method, and note the bacteria present. Incubate from thirty-six to forty-eight hours, or long enough for a complete differentiation of types. Pick colonies according to their characteristics and transplant to hemoglobin agar slants, taking one of every type present. Incubate twenty-four hours. Make smears of various types picked, and stain by Gram's method. Note characteristics. At this time many types can be named—that is, by combining the information obtained from their morphologic and cultural characteristics a pneumococcus or *Micrococcus catarrhalis* could be recognized, but for other types, such as the streptococcus group or Friedländer bacillus, it is necessary to investigate their action on other mediums, such as the sugars, for final naming. Make two or three hemoglobin agar slants of each type isolated, using two for the free growing types and three for the less free growing types. Incubate twenty-four hours. Add about 1 cc. of sterile physiologic sodium chloride solution to each type, and with the aid of a platinum loop rub off the growth from the surface of the medium, taking care not to break the surface. Transfer the suspensions thus made into sterile dry tubes, using a separate tube for each type. Heat in water bath to 60 C. for one hour on two successive days. Count the number of organisms present in each type and combine them to form the dosage desired; place the mixed suspension in a sterile 15 cc. bottle and use some type of rubber stopper that can be punctured by a hypodermic needle. Shake the bottle in a mechanical shaker for from three to six hours. Test for sterility by withdrawing some of the contents of the bottle by the aid of a hypodermic needle and syringe and planting on hemoglobin agar slant. Incubate forty-eight hours, and if at that time there is no growth on the slant remove stopper aseptically, add one drop of tricresol and restopper. The suspension is now ready for use.

Postnasal and Tonsil Cultures.—With the aid of a small sterile swab collect some postnasal secretion or secretion from a tonsillar crypt, taking care not to brush the anterior nares or any part of the mouth or throat any more than is necessary. Immediately transfer to a hemoglobin agar plate, spreading in increasing dilutions as described for sputum. Make smears and stain by Gram's method, noting the organisms present. Continue as in sputum. Although many types will grow well on plain agar, the virulence, if any, of the types is better supported by keeping them on hemoglobin agar at all times during the process. Use all types present, whether recognized pathogens or not, because nonpathogenic types may under certain circumstances be pathogenic. In any event, the addition of a nonspecific foreign protein will at least probably aid the specific types. The collection of the specimen and the selection of a protein of the specimen for culture is of the greatest importance, and on this depends to a great degree the value of the resulting bacterin as a therapeutic agent.

At the same time that the vaccine is being prepared, a filtrate or toxin is also being prepared which is made as follows:

The soluble toxins are prepared by adding a small chunk of sputum to the 1 per cent solution of sterile dextrose. This is then incubated and the toxin made forty-eight hours afterward.

The remainder of the sputum is emulsified with glass beads and physiologic sodium chloride solution and filtered at once through a Berkefeld filter. Any suspension that is left is filtered every twelve hours, and this material is designated as the secretion filtrates. Tests are made with filtrates set up at once, in twelve hours, in twenty-four hours, and so on, and the results are tabulated. It has been an interesting observation that in many instances patients tested with the secretion filtrates have had sufficient reaction to produce violent asthmatic seizures. The accompanying table shows the number of cases treated with the secretion filtrates, soluble toxins and bacterins, and the results derived therefrom.

Results of Treatment

	Number of Cases	Relieved	Improved	Unimproved	Cases Showing Marked Reaction
Patients treated with secretion filtrates who had been hitherto treated with bacterines without relief	56	28	18	10	15
Patients treated with secretion filtrates, soluble toxins, and bacterins....	86	54	18	14	..

METHOD OF ADMINISTRATION

After the preparations have been made and properly bottled, 0.1 cc. of all dilutions is injected intradermally and the resulting reactions if present are indicative of the dosage that should be given as the initial injection. I have found by experience that it is usually safe to use as the initial dose the amount of soluble toxin or secretion filtrate that does not give an area of hyperemia greater than 2 cm. in diameter. If the intradermal reaction is more severe, then a smaller amount should be given to start with. The ideal method for administration would be to give the soluble toxin and bacterin together every fourth day, alternating with the secretion filtrate on the fourth day. The dosage should be gradually increased. Mild reactions can be ignored, but systemic reactions should be considered and the same dosage should be again given until a reaction is not experienced. Then the dosage should be increased.

It must be stated that, owing to the fact that this method has been used only for the last six months, it is impossible to state how long these patients will stay asthma free. But these patients had been up to the time of treatment constantly asthmatic without any remission of symptoms for longer than a day or so, and have gone in some instances as long as five months without symptoms. I therefore feel that the treatment is worth while, at least from an economic standpoint.

If the patient proves sensitive to the secretion filtrates and soluble toxins, they also are administered with the vaccine. In many instances the patient will prove negative to one or the other, and treatment should be carried out with the material showing reaction. Again, if relief

is experienced, the patient is placed under observation and treatment is continued, but if no relief is noticed, then special therapy is resorted to.

SPECIAL TREATMENTS

1. *The Quartz Light.*—Brown and Hunter have shown in a series of 166 consecutive patients on whom calcium determinations were made that 39 per cent had a definite calcium deficiency, 24 per cent were low normal and 37 per cent were normal.

There were 100 patients with asthma. Of these, 42 per cent had a definite calcium deficiency, 23 per cent were low normal and 35 per cent were normal.

There were forty-three patients with perennial hay-fever or vasomotor rhinitis. Of these, 37 per cent had a definite calcium deficiency, 21 per cent were low normal and 42 per cent were normal.

There were thirty-two patients with typical seasonal pollen hay-fever. Of these, 28 per cent had a definite calcium deficiency, 34 per cent were low normal and 38 per cent were normal.

There were fifteen patients with eczema; 40 per cent of these were calcium deficient, 20 per cent were low normal and 40 per cent were normal.

All patients with any degree of calcium deficiency were advised to eat plenty of the foods that are rich in lime, and to get as much sunshine as possible. Patients with a low calcium were all given from 3 to 10 grains of calcium lactate (0.2 to 0.65 Gm.) three or four times a day, and parathyroid, from $\frac{1}{20}$ to $\frac{1}{10}$ grain (3 to 6 mg.) from two to four times daily, or thyroid, from $\frac{1}{20}$ to $\frac{1}{2}$ grain (3 to 32 mg.) from one to three times a day, or both by mouth. Patients with a definite calcium deficiency also received the quartz lamp treatment. Gratifying results were obtained in 54 per cent of the calcium deficient cases and definite improvement in an additional 43 per cent; in only 3 per cent of these cases was the treatment a failure.

My experience has not been that of Brown and Hunter in the estimation of the blood calcium. Blood calcium estimations were done according to the Clark and Collip method in 177 cases with only six low normal and thirty-two high normal reactions. Regardless of the fact that in all these cases the blood calcium was normal, quartz light following infra-red rays was used with marked beneficial results. I used quartz light in these cases, regardless of normal blood calcium, chiefly because they were mostly among children who were definitely anemic and poorly developed physically, with definite evidence of rachitis, and whose living conditions were so poor that they had no opportunity to be in the sunlight. I also found it beneficial in adults with a dry cough, with extremely tenacious fibrous sputum, and in adults with poor physical development who had little opportunity for exposure to the sun's rays.

Relief in the acute attacks of asthma seems definite from exposure to the infra-red rays followed immediately by the ultraviolet rays. My technic, therefore, in all these cases has been first to expose the patient back and front to the infra-red rays and then to follow immediately with quartz light irradiations of varying intensity and distance from the patient's body. As a result of this procedure thirty-one cases were cured; seventeen were relieved, and two were not relieved.

2. *Roentgen Ray.*—Treatment with the roentgen ray unquestionably exerts a favorable influence on chronic asthma. Just what the action may be has not yet been determined. Harkavy [1] reported a number of cases treated by this method with marked improvement, and he believed he was dealing with unresolved pneumonia, as diagnosed by roentgenograms. Waldbott [2] believes that the benefits are derived from a stimulation of the lymphatic system. Groedel and Lossen [3] reported a series of forty-five cases in forty-one of which moderate improvement followed roentgen-ray therapy.

3. *Endocrine Therapy.*—In many of these asthmatic cases, and especially in children, there is definite evidence of endocrine dyscrasia. The predominating set of symptoms are those of hypo-adrenia and hypotension, weak cardiac action and pulse, together with nervous symptoms suggestive of neurasthenia. Frequently, cases are seen occurring in women at the beginning of or during the climacteric, or during or at the beginning of pregnancy. Again, cases are seen associated with hyperthyroidism or hypothyroidism. Cases are also seen associated with postpituitary disease, especially in children. It has been my procedure in these cases to give epinephrine, from 2 to 5 grains (0.13 to 0.32 Gm.) three times daily, combined with postpituitary substance, from $\frac{1}{8}$ to $\frac{1}{2}$ grain (0.008 to 0.032 Gm.) or even 1 grain (0.065 Gm.) twice daily, and also thyroid extract, from $\frac{1}{4}$ to 1 grain (0.016 to 0.065 Gm.) twice daily, if the indications are sufficient.

Although endocrine therapy as a whole is more or less disappointing, some cases respond so readily with improvement lasting for years, if not indefinitely, that this treatment is well worth considering when especially indicated.

4. *Drug Therapy.*—Epinephrine chloride, 1:1,000, in from 5 to 15 minim (0.3 to 1 cc.) doses, still ranks first for its rapidity and efficiency in controlling asthmatic attacks, and it has also been my experience in several instances that if for some reason a patient has not been relieved by any other method, he may in time, if kept under the influence of small doses of epinephrine, or prevented from having a severe attack by the administration of epinephrine on the slightest sign of an asthmatic seizure, become asthma free.

Here also should be mentioned ephedrine, the alkaloid first obtained by Nagai in 1887 from the Chinese drug ma huang. Since its discovery considerable chemical work has been done on the alkaloid, but the drug has never been adequately standardized because of the fact that until recently it was not considered therapeutically important. In chemical composition ephedrine is allied closely to epinephrine. Scientific studies have shown that the physiologic effects on circulation, smooth muscle and secretions are the same qualitatively as those of epinephrine. It stimulates the central nervous system and depresses the heart, but these effects are elicited ordinarily by toxic doses. Quantitatively, there are important differences in the effects of epinephrine and ephedrine. The effects of ephedrine are more persistent, though seldom as intense as those of a full dose of epinephrine. Ephedrine is absorbed from the intestinal tract and, from the limited clinical data available so far, it has been found that the drug given by mouth is just as effective as by intramuscular injection and that the action begins about the same time after administration. Ephedrine is also much more stable. Solutions of ephedrine are stable indefinitely even when exposed to light and air, and are not decomposed on boiling. It is not a habit-forming drug. The lethal dose is from thirty-five to a hundred times that required to

1. Harkavy, Joseph: The Rôle of Unresolved Pneumonia in Bronchial Asthma, J. A. M. A. **79**: 1970 (Dec. 9) 1922.

2. Waldbott, G. L.: Roentgen-Ray Treatment of Spleen in Asthma Bronchiole, Arch. Int. Med. **36**: 743 (Nov.) 1925.

3. Groedel, F. M., and Lossen, H.: Die Rontgenbehandlung des Asthma bronchiale, in Salzmann, F.: Die Rontgenbehandlung innerer Krankheiten, Munich, J. F. Lehmann, 1922.

produce maximum physiologic effects, depending on the route of administration. Ephedrine sulphate may be given orally or hypodermically. Its effective administration by mouth is distinctly in its favor. When given intramuscularly there is no pain at the site of injection or marked local reaction. The usual single dose is ¾ grain (0.05 Gm.) for adults; if ineffectual, it may be increased. If with this dosage there is an indication of untoward symptoms, it should be reduced. The average daily dose is from ½ to ¾ grain (0.032 to 0.05 Gm.) given two or three times a day. The maximum daily dose is 4½ grains (0.28 Gm.). Children should receive doses in proportion to their size and age. Small children may be given the drug in aqueous solution in which 1 minim (0.06 cc.) contains ½ grain (0.032 Gm.) of ephedrine. Ephedrine solutions are slightly bitter. A word of warning may be justifiable at this point as to the toxicity of ephedrine.

In analyzing 100 cases of bronchial asthma in which ephedrine was used, the following untoward symptoms were encountered: tremor, thirty cases; nausea, twenty-five; cardiac palpitation, fifteen; sleeplessness, twenty; drowsiness, five; bladder irritation, six; suppression of urine, three; increased blood pressure, five; relief of asthmatic symptoms, seventy-five; relief in severe asthmatic seizures, ten. As will be observed from the data, ephedrine cannot be considered an altogether harmless drug, and should be administered with care.

Potassium iodide in doses of from 10 to 20 grains (0.65 to 1.3 Gm.) three times daily is especially beneficial in asthmatic bronchitis, and should be an adjunct to the vaccine therapy, as it has definite influence in increasing the secretions of the bronchioles and vesicles of the lungs, thereby aiding the action of the bacterin. It is also my custom to give potassium iodide for a few days before collecting the sputum for the autogenous vaccine.

Atropine sulphate in doses of from $\frac{1}{50}$ to $\frac{1}{100}$ grain (1.3 to 0.6 mg.), although helpful, is somewhat disappointing.

Digitalis preparations should not be overlooked when cardiac embarrassment is seen in the severe cases.

5. *Operative Procedure.*—As I am only an internist, it would be a presumption on my part to discuss operative procedures in this disease, but I do feel that I can justly state from my observation of cases in which operations have been performed that many would have been more benefited had they been thoroughly studied from the allergic standpoint. Piness and Miller,[4] Lintz [5] and Kahn have shown the inadvisability of operative procedure on the nose and throat in allergic conditions. In an analysis of 250 cases of asthma treated, seventy-five patients, or 30 per cent, gave a history of one or more operations on the nose and throat with no improvement. After the cases have been studied thoroughly from the allergic standpoint and all treatment has failed, if definite obstructive symptoms are present, the operative measures should then be resorted to.

6. *Climatic Change or Hospitalization.*—As a last resort, climatic change or hospitalization should be used. It has been my experience that more or less relief can be obtained in about 60 to 70 per cent of all asthmatic persons if a thorough study of the case is made and the use of specific proteins and vaccines is adhered to. With the advent of nonspecific therapy, quartz light, roentgen-ray and endocrine therapy, cases that have been hitherto considered hopeless are now benefited. Therefore, the patients not benefited in any way from the methods as laid down in this paper should be advised to make a definite change in their living conditions and a change of climate and environment. Patients who for financial reasons cannot avail themselves of the change of climate should be hospitalized and placed on a regular regimen; the most gratifying results have been obtained by such methods. There is no doubt of the fact that many patients can be permanently cured by keeping them free from asthma over a long enough period of time.

4. Piness, George; and Miller, Hyman: Allergy: A Nonsurgical Disease of the Nose and Throat, J. A. M. A. **85**: 339 (Aug. 1) 1925.

5. Lintz, W.: Bronchial Asthma, M. J. & Record **119**: 287 (March 19) 1924.

CONCLUSIONS

1. A case of asthma cannot be successfully treated without careful study; therefore, hospitalization for from three to four days is ideal.

2. Operations should not be performed in allergic cases unless a complete survey is first made, as many cases are made worse by too hasty operative procedures.

3. It has been proved that many patients develop a seeming sensitiveness to their own respiratory secretions, and when the filtrates derived from these secretions are used subcutaneously, marked relief has been experienced in cases otherwise unrelieved.

4. Caution should be used in the administration of these filtrates, as severe reactions have been experienced, in the form of asthmatic seizures.

5. One should not hesitate to retest if the evidence is sufficient that there is a specific protein sensitivity, as many patients may not show any reaction today to the test and may be markedly sensitive tomorrow.

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ASTHMA FROM THE STANDPOINT OF THE RHINOLOGIST *

EDWIN McGINNIS, M.D.
CHICAGO

It is of historical interest that the Egyptians, Greeks and Romans recognized asthma, and that it represented as much of a problem in their time as it does at present. Salter's explanation in 1864 of this age-old problem was that asthma was essentially, with perhaps the exception of a single class of cases, exclusively a nervous disease. In 1878 J. R. Berkart stated that "asthma was a symptom of chronic bronchitis and emphysema, as well as one of those that are present in various cardiac affections." He compiled a textbook, which appeared in 1911, in which he made the statement that "asthma is a symptom of fibrinous bronchitis and is caused by a micro-organism."

F. H. Bosworth, as a rhinologist, looked on asthma as a vasomotor rhinitis, depending on three prerequisites: first, a neurotic temperament, according to the teachings of Salter; second, pathologic conditions in the mucosa of the nasal tract, and, third, some substance, so far undetermined, present in the atmosphere, which was capable of producing asthmatic paroxysms. He was of the opinion that "just so far as we can cure nasal disease, just so far can we cure asthma."

Later, the allergic phenomenon was stressed as a cause for the symptom of asthma. This theory was stimulated by the experiments of Auer and Lewis in 1909. Karl K. Koessler and Chandler Walker both have recognized and described two types of asthma; the first, called by Koessler the allergic type and agreed

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to by Walker, although he does not mention Koessler; the second type, called by Koessler the bacterial type of asthma, or the so-called asthmatic bronchitis of Walker. Koessler admits that there may be mixtures of the two types. Thus, seemingly widely divergent views can be harmonized. In fact, in the diagnosis of asthmatic conditions, it becomes more and more evident that team work in diagnosis and treatment would give the best results; for asthma is a symptom, not a disease. It is a symptom that may arise from a number of conditions. It is the failure to recognize this that has lessened the value of the work that has been done in the past.

The medical man who believes the causative factor to be protein absorption, from either the respiratory or the gastro-intestinal tracts, or food absorption, the surgeon who believes only in nasal surgery, and the physician who believes in the theory of deficient calcium content in the blood could all benefit by a consideration of all the possibilities.

It is, however, my task to take up the intranasal picture in the various types of cases in which asthma is a symptom, and to note the anatomic defects in the asthmatic nose, as well as the pathologic results of the bacteriologic conditions in these noses. I shall also indicate the lines of usefulness of the rhinologist in cases of asthma.

The asthmatic nose is essentially the nose of the frequent colds, some of which last a long time. Structurally, the asthmatic nose is the nose handicapped either by the results of chronic infection, or, in the adult, by variations in thickness, and curvatures of the nasal septum. The intranasal picture varies with the seasons of the year. If seen during late spring, summer or early autumn, there may be very little to excite one's attention. Examination of the same individual during the late fall, winter and early spring may completely change the picture. If the asthmatic nose is seen during an acute cold, much can be learned. So, it is best not to base too much on the evidence of one examination. In infants and young children the same is true. In this class of individuals there is an added factor; namely, the nasopharynx. In practically all the children with acute asthmatic bronchitis that I have examined, I have found and advised the removal of a rather large obstructing adenoid. As a rule, infants' nasal chambers are broad and not much obstructed except by purulent discharge and swollen mucosa.

My first experience with the Voltilini observation was in 1912. A physician's wife in the throes of asthma came in to consult me on account of a blocked nose. Examination revealed the nasal chambers filled with large nasal polypi and purulent discharge. A complete removal of these was done, and in so doing, some of the ethmoid cells were broken down. She came in the next morning for removal of the nasal packs, and to my surprise she said that she had spent a very comfortable night without asthma. She has remained well to the present time.

We have all had similar experiences, showing that the presence of nasal polypi or hyperplastic ethmoiditis is a well known and recognized indication for intranasal surgery.

The focal infection theory has added greatly to the effectiveness of diagnosis and treatment. I remember seeing a patient with a carbuncle of the elbow later develop a one-sided backache in the kidney region, and still later pus cells and *Staphylococcus pyogenes-aureus* in the urine. Cystoscopy localized the lesion in one kidney, which was removed. On removal, that kidney was found to have a carbuncle similar to the elbow lesion. Then again I have seen patients who had had their tonsils nearly all removed develop a chronic polyarthritis, and on examination have found a bit of tonsillar tissue buried in the scar of the tonsillar fossa. After thorough removal of the tonsillar tissue these patients have recovered promptly from the joint infection. Also after working up the bits of tonsillar and scar tissue bacteriologically, I have been able to produce similar joint involvement in laboratory animals.

Thus my curiosity became aroused. The more one studies asthmatic individuals, the more one is impressed by the fact that asthma must have an underlying basic condition which originated in focal infection. The asthmatic person is very comfortable and almost well in the late spring, summer and early autumn, the period of natural quiesence in such nasal infections, but with the onset of winter he suffers chest upsets. These patients have all learned to seek a summer climate for winter if they are able to finance it. Practically all of them will admit that if it were not for their colds they would be comfortable. In careful history taking one will usually elicit the fact that their colds are stubbornly tenacious. In fact, most of them hardly get over one cold before they have another. I well remember the first asthmatic patient that was referred to me for upper respiratory examination. It was in late November, and the young man had taken a very hard cold and was having great difficulty with respiration. Examination of his nose revealed that all the nasal cells draining into the middle meatues on both sides were involved. I advised intranasal surgery to facilitate drainage of all these cells. At this time I had a friend who was a competent bacteriologist and who had just completed his internship, and I asked him to examine this material. He recovered hemolytic *Staphylococcus aureus* in pure culture. This was pathogenic to rabbits and produced acute bronchopneumonia resulting in death. This study stimulated a bacteriologic interest in nasal infection, and for a long time we worked up bits of ethmoid cell lining mucosa, and paranasal sinus lining membranes bacteriologically. The results, quoted below, were embodied in a preliminary report [1] published in 1923.

The first report covered twenty-five cases of sinus infection; nearly half were cases of asthmatic bronchitis with ethmoid involvement. The material was obtained at operation. The bases of the removed ethmoid cells and intracellular mucosa were dropped in sterile dextrose broth from which blood agar plates were made. The clinical conditions for which treatment was sought were asthmatic bronchitis, ten; headache, four; arthritis, three; frequent colds, colitis and acute sinusitis, each two, and acute nephritis and subacute bronchitis, each one. In fourteen cases a pure culture was found. Of these cases three showed hemolytic *Staphylococcus aureus;* six nonhemolytic *Staphylococcus aureus;* four *Staphylococcus albus,* and one *Streptococcus viridans.* In all but one case, either *Staphylococcus aureus* or *albus* was found in pure or mixed culture.

Preliminary experiments to determine the virulence have been made. In the few strains of staphylococcus tested, there was no evidence of such pyogenic properties as have been shown in staphylococci isolated from osteomyelitis or other suppurative processes. Injections were made intravenously in rabbits, small amounts of the living organisms being used. One strain of hemolytic *Staphylococcus aureus* was injected in four rabbits and produced acute bronchopneumonia. In one of the animals there was a villous, obliterative pericarditis set up similar to that seen in man as a terminal event in chronic nephritis. Three other strains of *Staphylococcus aureus* from ethmoidal infections produced acute changes in

1. McGinnis, Edwin; and Cary, W. E.: Laryngoscope **33**: 424 (June) 1923.

the kidneys and lungs, but no evidence of metastatic abscesses. These strains produced an early death following small injections (from one fiftieth to one twelfth of a twenty-four hour slant culture). Other organisms injected over three or four month periods did not show such virulence. Two such strains were *Streptococcus viridans* from sputum and ethmoid infections, and one a bacillus isolated from catheterized urine of a case of chronic nephritis.

The outstanding features of the work on ethmoid infections up to the present time are:

1. The frequency of pure cultures of staphylococci (more than 50 per cent of cases).
2. Absence of pyogenic properties of these nasal staphylococci in rabbits.
3. Frequent involvement of the kidneys, heart and lungs when ethmoidal staphylococci are injected intravenously in rabbits.

COMMENT

This bacteriologic work, done largely on asthmatic patients, shows the opportunity of the rhinologist to be helpful in their cure. This cure is possible through a careful surgical process that restores the nasal tract to a nearly normal condition, thereby removing the danger of the development of infections such as those referred to above, infections far reaching and often of serious final effect on the human system.

For a good many years I have been interested in such intranasal corrective surgery, a surgery I aim to do with the least possible removal of intranasal mucosa, the idea being that if the anatomy can be restored toward the normal, the physiologic functions of the mucosa will take care of future infections. The end-results have justified the efforts, because in the asthmatic cases in which operations were performed, the frequent colds have been almost eliminated, and an occasional winter cold has been easily benefited by simple treatment.

The young asthmatic patient is very quickly relieved and in most instances is completely cured. Asthma of long standing in middle aged or old people does not yield readily to intranasal treatment or, in fact, to any other treatment. This is easily accounted for when one considers the peribronchial changes brought about by long continued infection.

Clinically, one finds that an anterior ethmoiditis is usually the rhinologic condition found early in the cold, but later the antrums of Highmore may become involved. In children, because of the presence of infected adenoid tissue, the sphenoids and posterior ethmoid cells are also the seat of infection. Diagnosis is based on intranasal visual examination. Transillumination and roentgen-ray plates are helpful, but too much importance should not be given to roentgenographic observations, because I have seen infections missed by this means. This is not hard to explain, because changes in the nasal cells of asthmatic persons are not such as can be recorded on the roentgen-ray plate. The bacteriologic examination is more helpful.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. MC LAUGHLIN, CLARKE, STOUT, MANGES AND HAWLEY, CLERF, EIMAN, WILMER AND MC GINNIS

DR. GEORGE PINESS, Los Angeles: Dr. McLaughlin has brought out the fact that he makes routine tests with twenty-four proteins, using the others only when he thinks it necessary. My experience has been that it is advisable to test every patient with all available proteins because many times the uncommon protein is the factor that produces the symptoms because of which the patient presents himself. I believe that if more proteins were used, and the patient was tested repeatedly, the end-results would be more satisfactory, and more actual positive reactions would be found. A failure to react on a second test after the first was positive does not indicate that the patient is nonsensitive to that particular protein because of the many immunologic factors that enter into the allergic phenomena. With the intradermal versus the dermal test, our experience has been that given an active protein and a sensitive individual one will get just as good reactions by either method of testing, provided the test is made at the proper time and repeated frequently enough to produce reactions, particularly when one suspects sensitivity to a given protein. We admit that the intradermal test is the more sensitive test, but it is also the more dangerous and difficult for the inexperienced worker. The reason that goat hair reactions were so marked in one of the series of cases reported on by Dr. McLaughlin may be found in one of two factors: his extract contained some irritating substance, such as histamine, or the technic used in the preparation of the material was at fault. We have found that the percentage of reactions to epidermal proteins has been much greater than that mentioned by the author. However, this is sometimes due to environmental circumstances, since the workers in the East, particularly New York and Philadelphia, have very frequently found that their patients react to rabbit hair while we in the West find rabbit hair reactions unusual, except in cases of direct contact with these animals. The cereals, I believe, are the most important group of reactors, next to egg. I also believe that the many reactions obtained to rice by Dr. McLaughlin are probably due to some irritating substance in the preparation; but rice reactions should not be overlooked as rice is found in many diets—for example, bakers use it as a dusting powder on breads—and in face powders.

DR. GRAFTON TYLER BROWN, Washington, D. C.: I agree with Dr. McLaughlin that a positive skin test which cannot be obtained repeatedly is of no significance. Although patients may give positive skin reactions to substances which are not producing any symptoms at the time, these sensitizations should be kept in mind as potential sources of trouble in the future. Contrary to the opinion of Dr. Clarke, I believe that asthma is usually not self-limited; namely, does not spontaneously clear up. I have been very much disappointed with the results of nose and throat operations on patients with asthma, and therefore consider the indications for these operations to be only slightly greater in asthmatic than in nonasthmatic patients. As Dr. Clerf stated, there are other factors in asthmatic dyspnea than spasm of the bronchial muscles; namely, swelling of the bronchial mucous membrane and obstruction by secretions. Dr. Eiman stressed the importance of bacteria in the etiology of those cases of asthma in which sensitization to foods, animal epidermals or pollens has been ruled out; with this I heartily agree. Whether bacterial asthma is due to bacterial proteins, endotoxins or soluble toxins, bacterial vaccines would seem to be preferable to bacterial filtrates. Autogenous bacterial vaccines prepared from the total growth on suitable mediums contain the organisms themselves with their proteins, endotoxins and soluble toxins, and treatment with these vaccines produces antibacterial as well as antitoxic immunity. On the other hand, if one treats with bacterial filtrates alone, one does not immunize the patient against the organisms, and therefore little has been done to prevent a fresh infection. Furthermore, I do not consider that Dr. Eiman's controls are conclusive. For example, we see positive Pirquet reactions in normal individuals who do not have tuberculosis and have never had any clinical signs or symptoms of this disease. Likewise, we can get positive intradermal reactions with bacteria in normal persons who have never had symptoms of allergy. Blood calcium determination should be almost a routine procedure in asthma, especially in the nonsensitive type. I do not think it is advisable to give bacterial vaccines as frequently as Dr. Wilmer suggests, but prefer instead a five to seven day interval. Drowsiness was given by Dr. Wilmer as one of the symptoms resulting from the use of ephedrine; insomnia is much more commonly encountered. Change of climate for asthma is rather a will-o'-the-wisp. Much more can be done for these patients by scientific study than by sending them away.

DR. JAMES T. WOLFE, Washington, D. C.: Bronchial asthma is a symptom; its correction requires determination of the underlying cause. It is not a disease entity. The mechanism involves asthma, a motor mechanism, and a convulsion. Therefore, there must be nerve impulses or reflexes to bronchiole muscles. Vagus reflex may be an etiologic factor. I discard protein sensitivity as a basic cause. Having treated more than 200 persons with asthma and more than 2,000 with bronchitis, I recognize two groups of patients: those with asthmatic bronchitis, who recover from asthma when cured of underlying bronchitis, and, those with true reflex asthma, who recover only when the cause is removed which is keeping the pneumogastric in a hypertonic state, or one of exaggerated reflex, responsive to any exciting cause that may send the impulses to convulse the bronchiole muscles, producing asthma. Dr. Manges is strongly confirmatory, in his roentgenray reports, of the asthmatic-bronchitic group. If old infiltrated, inflamed and thickened bronchial tubes are cleared up and irritation is thereby relieved, sensitization, so called, disappears and these patients recover, the asthmatic-bronchitic group thus being taken care of. I do not know of any other agents than vaccines that will serve in these cases.

DR. GEORGE N. JACK, Buffalo: I believe that asthma is of blood origin. The unstable blood of the asthmatic person is extremely sensitized to nearly everything that pertains to life, not only to pollen and proteins but also to the weather and to gases. My experience is that the most frequent agents that disintegrate the unstable blood of the asthmatic person to produce an attack of asthma are gas, putrefactive alkaloids and meteorotelluric physicochemical phenomena. The last named are the most important. A commons cause is a blood disintegration due to a heat retention, which comes under this group. In 1920, when the temperature did not go above 86 degrees all summer, we had practically no summer-autumnal coryza. Some patients skipped for the first time in twenty-two years, and some for the first time in eighteen years. That, to my mind, indicated that summer-autumnal coryza is due largely to a heat retention. A man who works on a farm and has asthma only during the hot, humid summer months, although in the wintertime he feeds horses, works around cows and eats all kinds of food without any asthma, is not sensitive to dust, a food or gas; his asthma is due to a heat retention. Gas is the most immediate and urgent part of our existence; therefore, it is reasonable to expect that variations in its supply will be the most frequent cause of sickness. Nothing will disintegrate the blood to produce asthma so quickly as gas or sulphur fumes. Nothing will produce death so quickly as poison gas from decomposing organic matter, as shown by sudden death in sewers and silos. I have found that gases in the country, during the day, except in swampy sections, have a blood stabilizing action that is beneficial for asthma, while the gases at night, owing to the decomposition of organic matter, have a blood disintegrating action that is bad for persons with asthma, especially on chilly nights with heavy dews during the summer-autumnal season, when the summer-heated earth is cooling and ripened vegetation begins to wilt and decompose.

DR. AUSTIN A. HAYDEN, Chicago: The enlarged posterior parts of the inferior turbinated body may be an obstruction to ventilation and drainage of the sinuses. I think that they are very frequently overlooked, and are the cause of a considerable number of failures in the treatment of these conditions.

DR. H. M. DAVISON, Atlanta, Ga.: About a third of my work is with asthma and hay-fever patients and allied disease. I consider every case of asthma an undiagnosed case, and start out with a thorough history and a complete physical examination, including vaginal and rectal examination. In every case certain routine laboratory work is done, including a Wassermann test, a blood count, an examination of the night and morning urine, and of the stool and, in most cases, a gastric analysis. We also examine every chest roentgenographically. I have never relieved a case of asthma complicated by sinus disease until the latter condition had first been relieved. Orris root is a very common cause of sensitization. It is found in shampoos, shaving creams, tooth pastes, powders, scented soaps, perfumes, sachets and bath powders, and probably in many other products. Mr. Washburn of the Arlington Company has called my attention to the fact that pyrethrum is akin to ragweed, and that in many instances people who are sensitive to ragweed will also sneeze and have hay-fever or asthma when coming in contact with pyrethrum powders. In cases of asthma due to foreign bodies in the lungs, are localized or general physical signs present, and do such patients have a continuous asthma, or a spasmodic asthma? In treating with vaccines and extracts, we have followed the routine of making an extract from the sputum, suspending the vaccine in this extract, and giving the two together. We think we have obtained better results by employing this mixture than we have with either one alone. It is wise to remember, in speaking of repeated colds, that there are many colds that are really cases of vasomotor rhinitis or, more truly, allergic coryza. Not all patients with these colds will have itching and running eyes; sometimes they have only the symptoms of a cold.

DR. ALBERT H. ROWE, Okland, Calif.: Dr. Manges has emphasized the importance of a routine roentgenologic examination to rule out pulmonary disease other than asthma. The difficult breathing due to foreign bodies is often mistaken for asthma, and the services of the bronchoscopist are indispensable in such cases. In the diagnosis of bronchial asthma, emphasis has been laid on the history, which is of extreme importance. Food sensitization is often revealed by a history of "food dislikes and disagreements." The history also indicates, in many cases, sensitizations to animal emanation proteins, and to house dust, pollen and other types of proteins, which greatly aids in the final diagnosis. The history often indicates types of sensitization which are not shown by skin reactions. I am very certain that there are cases of pollen, food, and also animal emanation sensitization that give no skin reactions even with retesting. Treatment based on history in these nonreacting patients often gives excellent results. On the other hand, many patients give skin reactions which are only of potential danger to the patient. As brought out by one of the authors, the importance of such skin reactions as are obtained can be determined in large measure by a careful history. I feel that complete testing is a wiser procedure than testing with a limited number of proteins, as recommended by Dr. Brown. It is better to make testing a little too thorough than a little too incomplete and thus fail to show the sensitization present. I have found the use of autogenous vaccines and nonspecific protein therapy unnecessary, except in a small percentage of my cases of asthma. With a complete testing with the proteins of all common foods, animal emanations, dusts, pollens, orris root and other miscellaneous substances, approximately 90 per cent of the asthmatic patients have reacted positively to usually more than one protein. The importance of delayed cutaneous reactions must be recognized. I agree with Dr. Wilmer on the importance of retesting where skin reactions are negative to proteins, sensitization to which is suggested by the patient's history.

DR. HOWARD L. STITT, Cincinnati: It is agreed that the bronchoscope should be employed as a diagnostic aid in most cases presenting symptoms and obscure signs of bronchial asthma; in children, to exclude foreign bodies, and in observing cases associated with tracheobronchitis and bronchiectasis. For the treatment of bronchial asthma complicated by chronic bronchitis, tracheobronchitis, or bilateral or unilateral bronchitis, unassociated with active tuberculosis, I use a number 18 Welch coudé urinary catheter, introducing it through the glottis (by indirect method, the patient sitting), and thence to the main bifurcation. By touch manipulation, the curved tip of the catheter can be turned into the right or left main bronchus without the aid of the fluoroscope or other guide. Aspiration of the secretions and irrigation of the main bronchi with a hypertonic saline solution, consisting of sodium, calcium and potassium chloride, as suggested by Fischer and Bledsoe for mucous membrane irrigation, is valuable.

DR. FRANK R. SPENCER, Boulder, Colo.: I do not know how many of you make the skin tests for asthma. We have been making them for several years. It is hard for me to

believe that they are not very important, because we sometimes get very valuable information from them. Another important phase of these tests is the psychic effect on the patient. We sometimes have obtained the cooperation of intelligent patients who were very skeptical about anything of material value being done in the treatment of asthma. I agree with the authors when they say that these patients are not cured. They are not cured, but they are relieved, and lead quite a comfortable life so long as they keep away from the things which produce attacks of asthma.

DR. M. C. MYERSON, New York: I divide my cases of asthma into those with an organic basis and those with no organic basis. That is, I discard those that are true allergic cases. I happen to be one of the rhinolaryngologists who do nasal surgery and bronchoscopy but make no allergic tests. Dr. Clerf demonstrated a series of endobronchial lesions, to which I can add a case of very pronounced asthma in a man who had secondary syphilis, and who had a macular lesion in the trachea and bronchi. After antisyphilitic treatment the asthma cleared up. So did the syphilitic lesions. Not one of the authors mentioned a very important factor in these cases, namely, the psychoneurotic basis for asthma. Something has been said about atmosphere in asthma, and I will agree that atmosphere has something to do with some cases of asthma; but there is a certain type of atmosphere that we overlook, and in doing so we chase our patients to chiropractors and other cultists. This type of atmosphere is the environment of the patient. The nasal basis for asthma might be due to a direct aspiration mechanism. Recently, Crowe demonstrated that by inserting infected plugs of cotton into the sinus of an animal, in two out of four cases lung suppuration developed. That very plainly demonstrates that aspiration is a factor. In one case in which I did a bronchoscopy for a supposed foreign body aspirated two or three years previously, I found nothing in either the right or the left bronchus. I investigated the nose, and found a suppurative ethmoiditis. Clearing that up has relieved the patient of all symptoms.

DR. J. A. PRATT, Minneapolis: In doing nasal surgery, we should always try to leave the nose in a physiologically acting condition.

DR. LEON UNGER, Chicago: In our work at the Northwestern University Medical School in the asthma and hay-fever clinic, the results of our cases up to date about rival those of Dr. Clarke. I was very much impressed by Dr. Clerf's report on bronchoscopy. We have not been doing that as a routine measure. Possibly bronchoscopy would have revealed a foreign body in two or three cases in our series. Every patient with asthma coming to our clinic is given a complete roentgen-ray examination of the chest. Regarding the skin tests, we make the cutaneous tests in all cases, and use the intracutaneous tests only in those cases in which the cutaneous tests are negative, and in which we have a strong suspicion that we should get a positive reaction. As regards the number of tests, Dr. McLaughlin uses twenty-four tests as a routine and then uses all the other tests in patients giving a suggestive history. Our practice has been to test all patients completely, using about 200 tests for each one, as Dr. Piness does. We feel that we can often pick up an obscure case in that way, rather than by relying on the history, as Dr. Brown does. Dr. McLaughlin obtained positive results with goat hair in about 16 per cent of his cases. That is rather higher than our figures. He stated that it was used in pillows only. He omitted to say that goat hair is a component of mohair, widely used in furniture covering. There are some who discard and apparently pay no attention at all to the protein sensitization tests; some who pay entirely too much attention to these tests, and, finally, others on the middle ground who take every means that they have at their disposal to arrive at a correct diagnosis and the correct treatment of the particular case.

DR. JAMES S. MCLAUGHLIN, Philadelphia: In the first part of our series complete testing was done but no changes in the results were observed in the whole series. This is borne out by the statement of Dr. Unger, who said that they made 200 routine tests, and yet their results were like ours. We consider the history much more important than the test. We had 169 positive reactions to substances not ordinarily used, some of these tests being suggested by the history. We believe that a hypersensitive person is always sensitive and that the confirmation of positive tests is necessary. For example, I cite the ragweed reaction, which never disappears in those individuals sensitive to this pollen, even during the off season of the pollen. Rice was eaten with impunity by all our patients who gave positive reactions, so that I would say that this cereal was not a factor in causing asthma.

DR. J. ALEXANDER CLARKE, JR., Philadelphia: With regard to the question as to when a test is positive and when it is negative, we have gone on the theory that if a patient is sensitive, he will always give a positive reaction. Dr. Rowe, and some others keep testing and testing until they get a positive reaction. A great many factors, chiefly mechanical difficulties, influence the skin reaction: whether the extract is properly rubbed in or not, when one is using the scratch method; or whether it is made beneath the skin or into the skin if the intradermal method is being used. If we cannot get a consistently positive reaction, we say that the patient is not sensitive. That is certainly true in patients with hay-fever. In the animal and orris root cases, if the patient is truly sensitive, he will demonstrate the skin reaction every time. And if any one wants to see the ordinary variations in the skin test, let him take the same solution, using the same technic, and make six tests. He will find that no two reactions will develop in exactly the same way. But we feel very strongly that if a patient is sensitive at one time, he will be sensitive at any time. I consider the sinuses of increasing importance, so much so that I now regard every infected sinus as a potential source of asthma. The time to clear up a sinus is when it is first infected. We have many patients who say that they have had nasal treatment and a few operations for ten years before the asthma started. Something is wrong if that condition exists. If those patients had been treated properly, I do not believe that they would have had asthma. Every infected antrum or infected ethmoid, and every polypus should be regarded as a potential source of asthma, and every effort that nose and throat surgeons can make in these conditions is going to benefit the patient more than anything that can be done after he has a fully developed case of asthma, plus infected sinuses.

DR. LOUIS H. CLERF, Philadelphia: I want to assure Dr. Brown that I agree with him that the sketches which I made and the case histories that I recited were not illustrative of asthma. In the final analysis, the condition was cancer, but the fact remains these patients were treated as having asthma, in one instance, for eight months; in the other, a sufficiently long period of time elapsed wherein one might have made a diagnosis. And that strengthens my point, namely, that in certain cases presenting symptoms of asthma, in which the etiologic factor cannot be determined, and no definite diagnosis can be made, bronchoscopy ought to be done. In all those cases bronchoscopy is indicated. In a case in which there is infection of the nasal accessory sinuses, if treatment of the sinus infection relieves the asthma, bronchoscopy is not indicated. But these obscure cases are (and there are a fair number of them) subjects for diagnostic bronchoscopy. I did not mention the treatment. Time did not permit. Treatment is a secondary consideration from the standpoint of the bronchoscopist. I believe that our first duty is to aid in diagnosis. A certain group of patients with asthma, namely, those presenting signs of a suppurative tracheobronchitis, will often be relieved of their symptoms by bronchoscopy. If, after diagnostic bronchoscopy, the patient has been benefited by just one bronchoscopy, that gives an index as to whether or not further treatment should be carried out. The observations, of course, would govern that; but bronchoscopy is very important as a diagnostic measure in asthma.

DR. H. B. WILMER, Philadelphia: We had seven cases in which no relief whatever resulted from bacterial therapy, when the vaccine was derived from the sputum itself. However, when we passed the bronchoscope, aspirating at the bronchial bifurcation, we were able to make a bacterin from the secretion obtained, the use of which in the seven cases gave remarkable results.

DR. EDWIN MCGINNIS, Chicago: I used the word "colds" advisedly. I do not want it thought that I am not appreciative of the fact that most of these cases are infections of the ethmoid cells, frontal sinus and the antrum. In many cases of asthma, when the patient's history is taken, he will tell the physician that he has had a lot of colds, that the colds hang on, and that they are relieved with difficulty. Most rhinologists have passed that over lightly, and because of that have missed a lot of cases. I do my work in conjunction with medical men, and with the asthma and the testing clinic. But even then I do some skin testing myself. I made a statement about the roentgen-ray examination of sinuses, in which I did not mean to convey the idea that I do not believe in this procedure. What I meant by that statement was that I have recently seen two or three cases that were definitely cases of ethmoid infection in which the roentgen-ray evidence was not conclusive of sinus infection, but in which the history and intranasal examination pointed to infection that was overlooked. Some one took me to task for saying that these asthmatic persons are worse in the winter, and not so bad in the summer. I made the statement that the persons with asthma suffer most in the late fall, winter and early spring. That will take care of the hay-fever asthmas. Many of the cases of hay-fever are combinations of hay asthma and infection. In the last few years, I have operated on some patients with hay-fever to see what the effect might be; a goodly percentage of cures from the asthma has resulted but the nasal surgery does not affect the hay-fever at all. Dr. Hayden emphasized the hypertrophies of the posterior end of the turbinate. They are usually the result of infection, and are reduced at the time of operation, and with the drainage of infected cells the condition usually returns to normal.

STUDIES ON THROMBO-ANGIITIS OBLITERANS (BUERGER)

II. THE EFFECTIVENESS OF THERAPEUTIC PROCEDURES *

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It is generally recognized that, when a great many remedies are proposed for a condition, it is likely that no one of them is entirely satisfactory. A review of the recent literature dealing with thrombo-angiitis obliterans reveals a situation of this kind in regard to this disease. A great variety of procedures have been tried and therapeutic success is claimed by the sponsor for each of them, but the evidence presented is unconvincing, as in no instance has a group of patients been followed for a number of years to see what permanent benefit has been obtained. The relief of pain has generally been used as the criterion by which to judge that the treatment has resulted in improvement. And yet, it is well known to any one with experience in the treatment of this disease that occasionally pain will suddenly and inexplicably subside even without treatment of any kind, and without any visible change in the gross objective condition.

In a chronic process of this type, nature sometimes comes to the assistance of the patient to limit the necrotic process spontaneously or heal the ulcer or develop a collateral circulation in an affected extremity. In the face of these facts, claims for improvement due to a specific means of treatment must be made with great caution. Frequently, patients who have apparently been relieved by treatment will relapse and progress rapidly to amputation a short while later. A wide experience with this disease has led me to the conclusion that the only satisfactory criterion by which to judge the effectiveness of a method of treatment is the ability to save the extremities of these patients.

A rapid survey of the recent papers dealing with the treatment of thrombo-angiitis obliterans will illustrate the diversity of measures that have been proposed. The first significant suggestion came from Japan in 1916, when Koga [1] reported benefit from frequently repeated subcutaneous injections of Ringer's solution. In a group of patients treated in Germany, Schlesinger [2] noted improvement from repeated subcutaneous injections of sodium nitrite. In France, the Leriche [3] operation or femoral sympathectomy was employed, a procedure from which I have never seen any permanent benefit. More recently, improvement has been claimed from the use of insulin.[4] A paper published by Brown [5] from the Mayo Clinic reported favorable results in four cases treated by lumbar ramisection, although the patients were observed for less than ten months. Philips and Tunick [6] reported excellent results from the use of deep roentgen-ray therapy over the lumbar spine in a series of fifty cases treated at the New York Hospital for Deformities and Joint Diseases, although all their cases were observed for less than a year. A noted surgeon [7] at one of our foremost scientific hospitals has had the courage to suggest that the way to improve the inadequate circulation in an affected extremity is to ligate the main arterial supply and thus produce improved collateral circulation. This conclusion is based on a roentgen-ray and pathologic study of two amputated extremities. The procedure was actually carried out on one patient, and after less than three months' observation it is reported that he is improved. Steel [8] reported improvement in six patients treated by intravenous injections of sodium citrate. Suprarenalectomy has been performed by European surgeons in 120 cases, reports of which were collected by Herzberg.[9] He reviews the literature and finds that although the immediate effects were often good, the end-results have been disappointing, as the majority of patients followed up required amputation. Among the more innocuous methods of treatment are the exercises advocated by Buerger,[10] the white light treatment favored by Frauenthal,[11] and the administration of large quantities of fluid by duodenal tube, employed by Dr. Willy Meyer. I [12] have contributed an article advocating the repeated intravenous injection of hypertonic sodium chloride solution, based on experience with sixty-six cases observed for about three years. The criterion of improvement employed by most of the writers named has been the relief of pain during the period of observation, which was usually short. It is not reported for how long pain was relieved or how many of the patients subsequently came to amputation.

To establish a basis for comparison, I carried out an extensive study of the spontaneous course of

* From the surgical service, Mount Sinai Hospital.

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2. Schlesinger: Med. Klin. **50**: 1507, 1921.
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6. Philips, H. B., and Tunick, I. S.: Roentgen-Ray Therapy of Thrombo-Angiitis Obliterans, J. A. M. A. **84**: 1469 (May 16) 1925.
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8. Steel, W. A.: Sodium Citrate Treatment of Thrombo-Angiitis Obliterans, J. A. M. A. **76**: 429 (Feb. 12) 1921.
9. Herzberg: Arch. f. klin. Chir. **143**: 125, 1926.
10. Buerger, Leo: Circulatory Diseases of the Extremities, Philadelphia, W. B. Saunders Company, 1924.
11. Frauenthal: Internat. Clinics **4**: 62, 1918.
12. Silbert, Samuel: The Treatment of Thrombo-Angiitis Obliterans, J. A. M. A. **86**: 1759 (June 5) 1926.

thrombo-angiitis obliterans unmodified by treatment. I have personally examined 184 cases of thrombo-angiitis obliterans, seen in hospital, dispensary and private practice, and have studied our hospital records of seventy-four additional patients with this disease. This group includes only those patients whose symptoms began before the age of 45. I have examined many other patients over 45 with vascular occlusion in the lower extremities and have classed many of them as thrombo-angiitis obliterans, but because of the difficulty in differentiating such cases from occlusion due to atherosclerotic changes, they have for the present not been included in the figures presented. No effort was spared to determine with all possible exactness the time of onset of symptoms, both by personal inquiries of patients and by careful examination of hospital records of previous admissions.

From a study of this material I have found that nearly every case of thrombo-angiitis obliterans followed for a sufficient number of years has come to amputation. Of 258 patients, amputation of one or both lower extremities was done in 137. In 120 of the 137, or 87 per cent, amputation became necessary and was performed within five years from the onset of the symptoms. Of the remaining 121 of the 258 patients—those in whom no amputation was performed—the spontaneous course without amputation exceeded five years in only eighteen. It is thus fair to state that of the 155 cases of thrombo-angiitis obliterans followed for a sufficient time, 77 per cent came to amputation within five years from the onset of symptoms and this figure may be accepted as representing the probable outlook for untreated cases of this disease (tables 1, 2 and 3).

TABLE 1.—*Amputations*

Total Amputations	Amputation in 5 Years		Amputation in More than 5 Yrs.
	No.	%	
137	120	87	17

TABLE 2.—*Cases Without Amputation*

Total Cases Without Amputation	Symptoms Less than 5 Years	Symptoms More than 5 Years
121	103	18

TABLE 3.—*Results After Five Years*

Cases without amputation followed over 5 years	18
Amputations after 5 years	17
Amputations in 5 years	120
Total of cases followed for sufficient period	155
Percentage of patients requiring amputation in 5 years	77

With the knowledge of the spontaneous course of the disease established in this manner, comparison is possible with any group of cases which has been given the benefit of a specific type of treatment. It has been generally accepted that the satisfactory demonstration of cure in malignant disease must wait on the passage of time and the demonstration of freedom from recurrence. Claims for improvement or cure of thrombo-angiitis obliterans by treatment must be guarded in a similar manner. Temporary relief of pain or healing of ulcers is inadequate for scientific proof of the value of the treatment used. To claim serious consideration, the report must be made on a large group of patients treated by a single method and followed for a number of years, and a material reduction in the percentage of cases in which amputation was required must be demonstrated. In other words, the successful treatment of thrombo-angiitis obliterans, simply stated, is the one that can present its patients after a period of years with intact extremities.

It is too early to report on the results that have been obtained in the group of patients treated by the repeated intravenous injection of hypertonic salt solution. It will not be amiss in passing to state that, in eighty-four cases in this age group that have been treated by this method in the past four years, amputation became necessary in ten patients, or 12 per cent. Not all of these can be classed as failures, for five of them came to us with gangrene of the toes already present. Such cases are almost doomed from the start, as progression of the condition almost invariably takes place in spite of treatment for the first few weeks. I wish to emphasize that these figures are not presented to prove the merit of this treatment, for such a claim would be premature. It is a simple statement of the facts showing what success has been obtained thus far.

I take this opportunity to state my conviction that, whatever the underlying cause, prolonged smoking is the immediate causative factor in the production of this disease. I have passed through the phases of skepticism in regard to the importance of smoking, and it is only after considerable clinical experience that I found that I could no longer disregard this outstanding fact. The occurrence of this disease in smokers has been commented on by numerous German writers, and Erb [13] in 1904 stated that smoking was an important contributary cause of this condition. Dr. Howard Lilienthal [14] noted this relationship in 1914, and more recently Dr. Willy Meyer [15] devoted a paper to the discussion of the importance of this factor. Parks Weber [16] in England stated in 1916 that he had never seen a case of thrombo-angiitis obliterans in a patient who was not an habitual smoker. Schlesinger in Germany demands of patients complete cessation from smoking. It is therefore recognized that this disease occurs almost invariably in smokers, but owing to the great prevalence of smoking among men this has generally been looked on as a coincidence without direct significance. The vast majority of smokers never develop signs of this disease. Furthermore, experimental work on the effects of smoking has thus far failed to produce convincing evidence of pathologic changes in the vessels due to this cause; but these experiments were conducted with normal animals. It must be concluded, therefore, that smoking is not the sole cause of the disease, but that an additional underlying factor, a predisposition to vascular disease, or special susceptibility to the effects of tobacco poisons is present in the patients who develop thrombo-angiitis obliterans.

Although I realize that clinical experience unsupported by experimental demonstration is unsatisfactory as valid proof, the careful clinical observation of more than 350 cases diagnosed as this disease has undisputed value. The following points comprise the data on which my conviction is founded: I have never seen thrombo-angiitis obliterans in a man who was not an habitual smoker. Repeatedly, failure to improve under treatment has been noted in men who continued to smoke,

13. Erb: München. med. Wchnschr., 1904, number 21.
14. Lilienthal, Howard: Ann. Surg. **59**: 796, 1914.
15. Meyer, Willy: M. Record **97**: 428 (March 13) 1920.
16. Weber, F. P.: Quart. J. Med. **9**: 289 (July) 1916.

and prompt improvement began when they were finally induced to stop. In a few instances, patients who have been restored by treatment to excellent condition relapsed after resuming their smoking. All of the five patients who were previously reported as having come to me before gangrene had set in, and who nevertheless came to amputation, admitted subsequently that they continued to smoke up to the day of their operations. The resistance these patients show to discontinuing the habit of smoking in the face of earnest warning of the peril to their extremities is striking. Some of them helplessly admit that it is impossible for them to stop. It is for these reasons that I am convinced that cessation of smoking is of primary importance and that it should be insisted on as an essential therapeutic measure.

SUMMARY

1. A review of the methods of treatment proposed for thrombo-angiitis obliterans shows a wide diversity of procedures, and benefit is claimed from all of them.

2. No uniform criterion of improvement is applied to judge the value of the treatment used.

3. The spontaneous course of 258 patients with thrombo-angiitis obliterans has been studied. Only those patients whose symptoms began before the age of 45 are included in the group.

4. From a study of this material it is determined that 77 per cent of 155 patients lost at least one extremity within a period of five years from the onset of symptoms.

5. Satisfactory claims for therapeutic success must rest on comparison of results obtained in a group of patients followed for a period of five years with those of the spontaneous course of the disease.

6. In more than four years of experience with the treatment by means of repeated intravenous injections of hypertonic salt solution, based on eighty-four cases, thus far, 12 per cent have come to amputation. This figure includes all unfavorable cases, even those recognized as hopeless from the start.

7. Whatever may be the underlying cause, smoking plays an active rôle in the production of this disease, and cessation of smoking is the most important therapeutic measure.

55 East Eighty-Sixth Street.

Social Behavior Compared with Games.—As typical an instance of social behavior as can be found is that of the game, whether of children or of adults. The game needs no ulterior motive, being interesting on its own account. Though play may be carried on by a solitary individual, group play is much preferred, probably because the activities possible in group activity are more varied and complex, and so offer more of interest, while the interplay of different personalities in a group game adds an element of particular interest to the participants. Except in the simplest games, there is some "division of labor" among the players, their actions being coordinated toward some common end. Where the game is between opposing teams, the elements of rivalry and of loyalty to one's side add interest; and in proportion as "team work" is realized, the interest is enhanced. Thus a card game with partners is usually preferred to one in which every player is for himself. Ceremonies are close analogies of games, and the meaning which is supposed to underlie the ceremony but adds another element of interest, without detracting from the fact that the main interest is in the ceremony itself as a group activity. Where a given ceremony is common to several tribes, it often happens that the meaning attributed to it differs from one tribe to another—the real interest lies in the ceremony itself as a social activity.—Woodworth: Dynamic Psychology, pp. 197-198.

PARATHYROID PRESERVATION *

WALLACE I. TERRY, M.D.
AND
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During the past fifteen months an instructive study has been carried on by surgeon and pathologist at the University of California Hospital. Lahey's [1] report of frequency of parathyroid tissue in his removed specimens led to a somewhat similar investigation here. Its results, published by Millzner,[2] show an extreme variation in position of the parathyroids. This is very disturbing to the thyroid surgeon who has been operating in an atmosphere of smug security, confident of the posterior position of his patient's parathyroids. He has perhaps been so fortunate, thus far, as never to have encountered gross clinical manifestations of postoperative parathyroid deficiency. Evidence of this complication, though escaping notice in the ordinary routine of postoperative care, may be fairly frequently demonstrated to be present in a mild degree by the special tests known under the names of Chvostek and Trousseau. Chvostek's sign is perhaps too delicate, but when seen in a marked degree is a very definite finding, especially when it is known to have been absent before operation.

Millzner, by examination both of specimens removed at operation and of a series of cadavers, found a parathyroid on the anterior capsule of the thyroid gland in 10 per cent and on the lateral capsule in 30 per cent of cases.

These investigations, supported by the fairly frequent clinical signs of moderate transient parathyroid deficiency, have led to a modification of the technic of partial thyroidectomy employed in this clinic. Formerly, as is the case generally elsewhere, resection included the lateral capsule. Now the operation is so planned as to leave as much of the lateral capsule as possible. The anterior and lateral capsules are inspected carefully when the lobe is first mobilized in an effort to recognize and protect any parathyroid tissue on these surfaces. It is at this point that a suture is laid in the anterior capsule to serve as a mark of its identification in further studies of the relationship between any removed parathyroids and the various surfaces of the thyroid gland. Then clamps are so applied as to strip the lateral capsule off the lobe from before backward. After a much larger area of thyroid capsule has thus been saved, the usual resection is done. As a further effort toward their conservation, the freshly removed specimen is searched under sterile precautions for parathyroid bodies, which, if found, are transplanted as suggested by Lahey [1] into the sternomastoid muscle.

With the development of this technic, the proportion of parathyroids found in removed specimens dropped from 30 per cent to 10 per cent and there were relatively fewer cases showing even mild evidence of parathyroid deficiency.

CONCLUSIONS

1. In the standard operation of partial thyroidectomy, a surprisingly large number of parathyroid glands are being removed as a result of their frequent relationship to the anterior and lateral capsule of the thyroid gland.

* From the Department of Surgery, University of California Medical School.

1. Lahey, F. H.: Transplantation of Parathyroids in Partial Thyroidectomy, Surg. Gynec. Obst. **42**: 508-509 (April) 1926.

2. Millzner, R. J.: The Occurrence of Parathyroids on the Anterior Surface of the Thyroid Gland, J. A. M. A. **88**: 1053-1055 (April 2) 1927.

2. Their removal or injury is very frequently followed by moderate transient evidence of parathyroid deficiency.

3. By careful inspection, these bodies may often be identified and preserved. Routine preservation of the lateral capsule is an additional safeguard which should be adopted as a simple modification of present technic.

4. Even though the symptoms of this deficiency are transient and followed practically always by complete recovery, it will be conceded that parathyroid tissue is of extreme value to the patient and should not be removed or injured.

Parnassus and Third Avenues.

Clinical Notes, Suggestions and New Instruments

A LIVER COCKTAIL: LIVER IN EDIBLE FORM FOR THE PERNICIOUS ANEMIA PATIENT

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In the treatment of pernicious anemia there seems to be no doubt about the efficacy of a diet containing raw liver. However, after the period of hospitalization and stomach tube feedings is past, one experiences considerable difficulty in getting patients to continue their raw liver ration. After devising several rank failures instead of liver dishes, I suggested to Miss Clara Schroeder of Piqua, Ohio, a woman of ability in the culinary art, that she prepare an edible liver cocktail. The formula and its preparation are her suggestions. The dish has proved acceptable and even enjoyable to pernicious anemia epicures here and it has been served with success to healthy people at the dinner table as a summer cocktail in lieu of oyster. If carefully prepared it is a dish easily eaten by any one, but if dumped together it is not. It is hoped that others will use their ingenuity and devise other raw liver recipes, so that the pernicious anemia patient may soon have a variety of pleasing dishes of this important addition to his dietary.

PREPARATION OF COCKTAIL

Liver.—Locate a market where fresh choice calf's liver may be obtained. Place a standing order for a delivery every other day. As soon as each order is received at the kitchen, trim off the "skin" around the edges, and carefully remove all the veins and tough parts with a sharp knife. Rinse in cold water. Put the prepared liver through a meat grinder twice, using the finest cutter. Place it on ice immediately. One-half pound of liver makes four tablespoonfuls of crushed product.

Sauce.—Prepare a sauce as follows:

Tomato catchup (Heinz)	½ cup
Lemon juice	¼ cup
Worcestershire sauce	2 teaspoonfuls
Chives (finely chopped)	½ teaspoonful
Salt and pepper	to taste

Cocktail.—Mix the liver and sauce in the proportion of one part crushed liver to two and a half parts of sauce. Chill thoroughly and serve in a cocktail glass with salt crackers or wafers.

ADMINISTRATION

As for olives and oysters, so also with liver: a person will acquire the taste. In a few days the amount offered, which at first should be very small, may be increased until the patient readily accepts two cocktails daily, each of from two to four tablespoonfuls of crushed liver. It is essential that the following recommendations be strictly adhered to: Every tough part must be carefully removed and the liver finely ground; the cocktail must be served cold and eaten with crackers; and time must be allowed each patient to "develop a taste" before large amounts are offered.

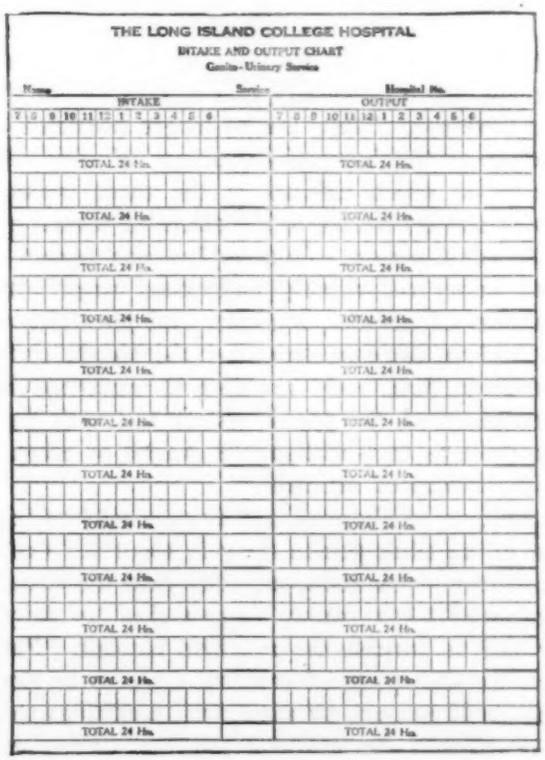
Orr Flesh Building.

AN INTAKE AND OUTPUT CHART FOR HOSPITAL RECORD

LOWRAIN E. MCCREA, M.D., PHILADELPHIA

One of the most difficult records to have accurately kept in routine hospital work is the "intake and output" chart. It was my aim to devise a chart that would at a glance give accurately the amount of all fluids ingested and the amount of urine excreted at individual hours throughout the day and night. This chart was designed while I was in the urologic service in the Long Island College Hospital, Brooklyn. It was accepted by the staff and has been used since as a routine as part of the permanent record.

The chart is so arranged that the recording in the intake column on the left and the output on the right both begin at 7 a. m., continuing through the day until 7 p. m., and from 7 p. m. to 7 a. m. The exact amount of fluid ingested or excreted may be hourly noted. There is also a space for a total of a twelve hour day and also of a twelve hour night, space being allowed for a twenty-four hour total.


THE LONG ISLAND COLLEGE HOSPITAL

INTAKE AND OUTPUT CHART

Genito-Urinary Service

Name ____ Service ____ Hospital No. ____

INTAKE | OUTPUT

7 8 9 10 11 12 1 2 3 4 5 6 | 7 8 9 10 11 12 1 2 3 4 5 6

TOTAL 24 Hrs. | TOTAL 24 Hrs.

TOTAL 24 Hrs. | TOTAL 24 Hrs.

TOTAL 24 Hrs. | TOTAL 24 Hrs.

TOTAL 24 Hrs. | TOTAL 24 Hrs.

TOTAL 24 Hrs. | TOTAL 24 Hrs.

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TOTAL 24 Hrs. | TOTAL 24 Hrs.

TOTAL 24 Hrs. | TOTAL 24 Hrs.

Intake and output chart

It has been my experience with cases of impaired renal function to be unable to judge the amount of water ingested and in many instances to have it administered as it should be done. To get the best results I have resorted to the very simple procedure of writing an order for the administration of 1 minim (0.06 cc.) of essence of pepsin to be given in 8 ounces (235 cc.) of water every hour. In this way water is no longer just a fluid but a medicine, and must be regarded, administered and charted as such.

ADVANTAGES OF THE CHART

With the chart attached to the hospital record it is an easy matter to tell at any hour the total intake and output for any day. In any field of medicine, but in urologic work particularly, where the ratio between these two must be constantly watched, it is essential to know and have accurately these data on the chart at all times.

This chart is printed by the Broderick Printing Company, 247 West Broadway, New York.

1923 Spruce Street.

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SATURDAY, SEPTEMBER 17, 1927

THE ADMINISTRATION OF CALCIUM SALTS

Calcium therapy has acquired a new interest in medicine along with the growing knowledge of the parts that the element may play in a variety of physiologic functions. These are no longer restricted to the building of the inorganic structure of the bones—a feature in which calcium is the most conspicuous element and is involved to the extent of several pounds in the adult person. Calcium has also become associated in as yet vaguely understood ways with the regulation of nervous, muscular and glandular activities, and in the coagulation of the blood; and it is believed to have some relations to variations in the permeability of the blood vessels and cells in such phenomena as transudation, the genesis of edema, and the appearance of urticarias.[1]

According to Sherman, the average calcium requirement of an adult person daily is about 0.5 Gm. As comparatively few common foods yield the element in abundance, it can readily happen that the daily diet may fail to furnish the requisite amount. Furthermore, the absorption of calcium seems to be modified in no small measure by alimentary conditions, notably the reaction of the intestinal contents. These considerations lend an obvious importance to the problem of administering calcium in satisfactory ways when such therapy seems to be indicated. Intravenous and subcutaneous procedures are attended with dangers or discomfitures; therefore the possibilities of the oral route call for careful consideration. Ordinary balance experiments afford only limited indications of the efficacy of ingestion of calcium-bearing substances because the alimentary tract is the seat of both absorption and excretion of the element. The fecal calcium may or may not have taken part in the tissue functions; a mere analysis of the output will not reveal the desired answer. Consequently, in recent years attention has come to be centered on the content of circulating calcium, which under normal dietary conditions is not appreciably changed.

A survey of the literature on the absorption of calcium as it may be reflected in a change in the blood concentration of the element might leave one unconvinced of the efficacy of administering calcium compounds by mouth. Many clinicians have accordingly abandoned the practice. The more recent studies give evidence, however, that with due attention to the conditions of administration it is possible to elevate the serum calcium concentration by the oral route of calcium supply. This is shown in the reports of Roe and Kahn.[2] In experiments on man with calcium lactate, they believed the optimal dose of this salt to be 5 Gm. This intake is adequate under normal conditions to produce definite increments in the blood concentration of calcium in the course of a few hours. Such results are obtained, however, only by ingestion of aqueous solutions when the digestive tract is comparatively empty; that is, either before breakfast or several hours after food has been consumed. Simultaneous ingestion of various foods along with calcium lactate in 5 Gm. doses and larger amounts of the salt are likely to produce a marked depression of the rate of absorption of calcium from the intestinal tract. In the case of the foods, the resultant decreased hydrogen ion concentrations are probably responsible for the unsatisfactory outcome. The absorption of the element is notably depressed by a tendency to alkalinity in the path of absorption. Larger doses of the calcium salts probably prevent optimal absorption because they produce some irritation of the intestinal mucosa. It appears, therefore, that administration of calcium salts, notably calcium lactate, can be made therapeutically effective if they are given in not too large amounts under essentially fasting conditions.

PRESENT KNOWLEDGE OF BRONCHIAL ASTHMA

In the search for relief from asthma, great progress has been made since the days when every one suffering with dyspnea was classified as asthmatic. The separation of cases into those of cardiac and those of bronchial origin has been helpful. More useful still has been the subdivision of cases of bronchial asthma into those arising from extrinsic and from intrinsic causes.[3] Extrinsic agents may be introduced by inhalation, by ingestion, through the unbroken skin, or by inoculation. Following their introduction, the phenomena of hypersensitiveness,[4] sometimes called "atopy" or "allergy" and often confused with "anaphylaxis," may develop. Intrinsic causes may lie in the bronchial tree or in other parts of the body and may include foci of infection, nasal polypi, diseases of the subdiaphragmatic

1. New and Nonofficial Remedies, 1927, p. 109.

2. Kahn, B. S., and Roe, J. H.: Calcium Absorption from the Intestinal Tract in Human Subjects, J. A. M. A. **86**: 1761 (June 5) 1926; **88**: 980 (March 26) 1927.

3. Osler, McCrae and Funk: Modern Medicine, ed. 3, Philadelphia, Lea and Febiger **4**: 102, 1927.

4. The term "hypersensitiveness" is not entirely satisfactory. "Allergy," originally suggested by Pirquet to describe the definite phenomenon of anaphylaxis, means a "changed reaction." Coca offered "Atopy," a strange disease. "Anaphylaxis" should be applied only to a typical antigen-antibody reaction artificially produced.

viscera, metabolic diseases, the so-called bacterial and winter asthmas, and secondary infection developing perhaps in the soil of an earlier pollen asthma.

The chief impression to be derived from the papers read in the symposium at the annual session of the American Medical Association in Washington [5] is that "bronchial asthma is a symptom; its correction requires determination of the underlying cause." [6] The search invariably is arduous. According to Wilmer, it involves the taking of a complete history, a thorough physical examination, a complete roentgen-ray picture of the sinuses, examination of the nose and pharynx, possibly a complete blood analysis, and a cutaneous test with all proteins and pollens. Clerf believes, furthermore, that bronchoscopy should be employed in cases presenting obscure symptoms referable to the bronchial tree if the symptoms do not disappear under the usual methods of treatment. Eiman, who excluded from his series cases due to "animal proteins, excretions and secretions" and persons "sensitive to pollens, plant proteins and foodstuffs," applied intradermal tests with Berkefeld filtrates of bronchial and sinus secretions. This method, apparently, should be employed in cases of "essential" or "idiopathic" bronchial asthma.

Some or all of these measures are necessary in each case. The history may reveal the cause of the disorder in the patient's habits, in his environment, or in his previous illnesses. Physical examination will exclude dyspnea arising from neoplasm or from cardiac, renal or vascular causes. Roentgen-ray examination, Stout reports, indicated pathologic conditions of the skull sinuses in 26 per cent of a series of patients with bronchial asthma. Manges and Hawley included the chest in the roentgen-ray examination of 157 patients with asthma, and found only 16 per cent without thoracic changes. They found, also, that of 155 children who had foreign bodies in the air passages, six, at some time, had been diagnosed as suffering from asthma. Examination of the nose and throat may reveal abnormalities. Stout, for instance, found that 20 per cent of his patients had antritis; 16 per cent, ethmoiditis; 10 per cent, frontal sinusitis, and 24 per cent, polyps in the nasal fossae. McGinnis, working largely on patients with asthma, recovered a pure culture of staphylococcus from more than 50 per cent of infected ethmoid sinuses. McLaughlin used in the neighborhood of twenty-four different substances in making 23,725 routine skin tests on 1,281 patients. Of these, 11.3 per cent were positive. Bronchoscopy, says Clerf, may make evident significant changes in the tracheobronchial mucosa. Of Eiman's patients, who, as has been shown, exemplified cases of idiopathic or essential bronchial asthma, 77 per cent were positive to intradermal tests performed with Berkefeld filtrates of bronchial and sinus secretions.

Treatment aimed at combating the abnormal conditions demonstrated by the examinations which have been outlined has indicated a more than probable relationship between the abnormalities and the concomitant asthma. In some cases the relationship has been demonstrated positively. In 882 cases, Clarke, using treatments which he classifies as "specific, surgical, vaccine and drug," obtained good results in 62.5 per cent and bad results in 37.5 per cent. In order to apply these figures for comparison to any given series, it would be necessary to correct for certain important variables, such as the age of the patients concerned. It would also be necessary to have the material equipment, skill and special knowledge available to experts. With these precautions, Clarke's results may be taken as a measure of present-day success in the treatment of bronchial asthma.

5. McLaughlin, J. S.: Skin Tests in Patients with Asthma, J. A. M. A. **89**: 863 (Sept. 10) 1927. Clarke, J. A., Jr.: Factors Governing the Treatment of Asthma, ibid. p. 866. Stout, P. S.: Nose and Throat Observations in Examination of Patients with Bronchial Asthma, p. 868. Manges, W. F., and Hawley, S. J.: Roentgen-Ray Observations in Asthma, p. 870. Clerf, L. H.: Bronchoscopy as an Aid in Diagnosis and Treatment of Bronchial Asthma, p. 872. Eiman, John: Studies in the Etiology of Bronchial Asthma, this issue, p. 953. Wilmer, H. B.: Studies in the Treatment of Bronchial Asthma, this issue, p. 956. McGinnis, Edwin: Asthma from the Standpoint of the Rhinologist, this issue, p. 959.

6. Wolfe, J. T., in discussion on symposium on bronchial asthma, this issue, p. 962.

EXPERIMENTAL TRACHOMA

The problem of the etiology of trachoma has been considered from several points of view during the last few years. Quite naturally, in harmony with the experiences gained by the investigation of comparable maladies, the assumption of a microbiotic causation of the disease has attained the greatest prominence. On the other hand, the object lessons of serious lesions attributable to dietary deficiencies have made some of the students of trachoma question whether the malady is not directly or indirectly brought about by the lack of certain indispensable factors concerned with nutrition. Bacterial causation has not been established for either beriberi or pellagra despite the features that they present which would lead one to suspect infection or contagion to play a part in their development. Proper food is both the preventive and the cure of beriberi and pellagra; and the eye disorder known as xerophthalmia is demonstrably an avitaminosis. A further possibility is presented in the suggestion that dietary deficiencies of one sort or another may become the predisposing factors in permitting an effective inroad of micro-organisms that otherwise are innocuous.

The report by Noguchi [1] of the Rockefeller Institute for Medical Research in a recent issue of THE JOURNAL serves to strengthen materially the evidence in favor of a parasitic origin of trachoma. He has succeeded in producing in monkeys ocular lesions closely resembling the clinical and histopathologic aspects of the human disease. This result was secured by inoculation of the primates with cultures of a micro-organism isolated from human cases among the

1. Noguchi, Hideyo: Experimental Production of Trachoma-Like Conditions in Monkeys, J. A. M. A. **89**: 739 (Sept. 3) 1927.

American Indians. The bacillus is superficially like some of the diphtheroids, though differing from them in many ways. The transmissibility of the experimental conjunctival disease in series has been clearly established. Koch's postulates have been fulfilled.

Possibly, the Indian malady is distinct in its etiology from the trachoma encountered among other persons. The presumption is, however, against such a diversity. Noguchi's result appears, like many of his earlier accomplishments, as a triumph of investigative skill coupled with patient effort and scientific logic. This is emphasized by the circumstance that direct inoculation of monkeys with human material failed. Not until the various microbial contaminants of the eyes of trachoma patients were isolated and tested in pure cultures was success attained with one of them. Apparently the natural resistance to the disease can be broken down or overcome only by massive invasions of the causal bacteria. The imagination will suggest easily what the success of various investigators in transmitting trachoma experimentally may lead to in the direction of prevention and treatment.

BLOOD PEPTIDES AND ARTERIAL HYPERTENSION

The idea that the development of arterial hypertension may be instituted by chemical substances coursing in the blood stream has long been an engaging one. It is more appealing than any purely mechanical hypothesis of the genesis of high blood pressure yet formulated; and there is a seemingly corroboratory analogy in the demonstrable hypertensive effects that known chemical substances can actually bring about when they are introduced into the circulation intentionally. Alcohol and tobacco, tea and coffee, all have at times been brought into consideration, usually by enthusiasts imbued with the purpose of the reformer. In addition to such exogenous potent substances there remains the possibility of endogenous products either fundamentally abnormal or merely normal constituents of the organism but arising for some reason in abnormally augmented amounts.

It is obviously desirable that the claims against each suspected engenderer of harm should be critically considered; for the discovery of the origin or direct causes of hypertension is certain to initiate a monumental advance in practical therapeutics. In 1924, Hülse and Strauss [1] expressed the conviction that the blood plasma of persons with arterial hypertension contains notable amounts of polypeptides; and on the basis of special experimentation the hypothesis was ventured that nephritic hypertension is due to the presence of these protein cleavage products. The normal blood plasma of man contains less than 5 mg. of peptide nitrogen per hundred cubic centimeters; in fact, 3 mg. would be far nearer the average limit. The German investigators maintained that the figures may rise to 30 mg. per hundred cubic centimeters in hypertension, an item that might well challenge attention.

Careful chemical examinations of the blood of many patients with hypertension in the Boston City Hospital by Jackson, Sherwood and Moore [2] of Harvard University Medical School showed an average peptide nitrogen content of 0.7 mg., with extremes of 0.0 and 5.2 mg. per hundred cubic centimeters. The degree of hypertension in these patients varied from 160 to 255 mm., with an average of 196 mm. Even in cases of nitrogen retention there was no demonstrable accumulation of a peptide fraction. The latter factor therefore cannot longer be seriously regarded of etiologic importance in hypertension.

1. Hülse, W., and Strauss, H.: Ztschr. f. d. ges. exper. Med. **39**: 413, 1924.

Current Comment

THE ESTIMATION OF BLOOD BILIRUBIN

The growing interest in the clinical estimation of blood bilirubin affords a cogent illustration of the wholesome way in which the development of our knowledge of physiology and biochemistry reacts on medical practice. The potent influence of new discoveries in bacteriology and immunology has long been recognized; but the effective help of progress in other fundamental biologic disciplines is not always so adequately appreciated because the results are as a rule less spectacular and direct in their application. Only a few years ago the bile pigment bilirubin was believed to be formed in the liver. Its migrations in the body fluids were accordingly evaluated from that standpoint. Today it is well established that the formation of bilirubin is essentially extrahepatic.[3] The bilirubin is carried from its loci of origin in the blood stream and excreted through the liver into the bile passages. This newer knowledge presents the function of the hepatic tissue toward the bile pigment in an essentially altered light. Bilirubin may now be expected to appear as a normal and regular constituent of the blood. Obviously an increased concentration of the pigment might argue for increased production or, equally well, for interference with the usual hepatic elimination. Studies made by Perkin [4] at the University of Michigan Hospital in Ann Arbor stress the possibilities the quantitative determination of blood bilirubin may have as an index of the progress of certain diseases, notably those of the liver and the biliary tract, the blood and the hematopoietic organs. He has discovered an important application of the estimation of bilirubin, as a routine measure, in patients receiving arsenicals, particularly of the arsphenamine group. Here it affords the earliest possible indication of injury to the liver. Perkin believes that if a record of the blood

2. Jackson, Henry, Jr.; Sherwood, D. W., and Moore, O. J.: The Blood Peptide Nitrogen in Arterial Hypertension, J. Biol. Chem. **74**: 231 (Aug.) 1927.

3. Bilirubin and the Bone Marrow, Current Comment, J. A. M. A. **88**: 105 (Jan. 8) 1927.

4. Perkin, F. S.: Blood Bilirubin Estimation and Clinical Significance, Arch. Int. Med. **40**: 195 (Aug.) 1927.

bilirubin value is repeated at regular intervals during the course of treatment, one may proceed with safety so long as the concentration of the blood bilirubin remains normal. Any considerable rise, indicative of arsenical hepatitis, calls for immediate revision of the treatment. Further applications to other conditions remain to be reliably established. The important feature, however, is the circumstance that dependable information of the normal physiology of the bilirubin has paved the way for the practical use of the established facts.

HICCUPS IN INFANTS

Only slight digressions from the normal physiologic functions are required at times to give rise to considerable bodily discomfort. For many of these experience has taught ways of relieving the distress, without any real appreciation of the remedial factors that are brought into play. This is true, for instance, in the case of the spasmodic contractions of the diaphragm known as hiccups. Under the ordinary circumstances of their occurrence they can be controlled by the simple expedient of sipping water. An explanation of the efficacy of this procedure that applies at least to the hiccups so frequently noted in infants after nursing has been formulated by Pendelton[1] at the Rush Medical College in Chicago. He has demonstrated experimentally that irritation of the human esophagus will cause hiccups. When regurgitation follows nursing it is probable that gastric contents thus lodged in the sensitive gullet initiate the contractions. It is not even necessary for actual visible regurgitation to occur. Any intrusion of the gastric contents into the esophagus by escape through the cardiac orifice of the stomach may suffice. This effect may result through distention of the stomach with milk, air or water, as well as from a spastic condition or a poorly functioning valve at the cardia. In any event, relief follows treatment by administration of fluids rapidly by mouth and in such amounts as will clear the esophagus. Mere swallowing movements usually do not suffice. Actual records have shown that in infants six or seven cubic centimeters of water consumed within half a minute will immediately stop most cases of hiccups of esophageal origin. The unaided relief probably follows the partial emptying of the stomach in natural ways whereby the possibility of renewed esophageal irritation is averted.

INSULIN AND HYPOGLYCEMIA

The increasing use of insulin in clinical medicine is serving to direct attention to the possible untoward symptoms for which this hormone may become responsible under exceptional or unanticipated circumstances. The most noticeable feature of overdosage with insulin is, of course, the resulting hypoglycemia. The low concentration of blood sugar is attended with manifestations of weakness that are readily relieved by suitable administration of sugar. The now widespread custom of making estimations of blood sugar for diagnostic purposes has brought to light the fact that hypoglycemia is by no means as uncommon as has been assumed. Some observers have been inclined to attribute many of the instances to what they glibly designate hyperinsulinism. It is questionable, however, whether hypoglycemia and hyperinsulinism are invariably closely interrelated. A lowered content of sugar in the blood may be attended by weakness, dizziness, pallor, sweating, hunger, disorientation, occasionally syncope and stupor, all symptoms of overdosage with insulin. On the other hand, all these typical manifestations may be missing even when the hypoglycemia is accurately established. Conversely, Harrop[1] has demonstrated at the Johns Hopkins Hospital that the administration of carbohydrate to unconscious persons in insulin reactions does not always have the immediate prompt effect that we have been led to anticipate. The degree of hypoglycemia apparently does not accurately determine the severity of the reaction, nor does the administration of sugar always relieve it. Recovery of consciousness may occur spontaneously even when the blood sugar is at a low level of concentration. Harrop regards it as probable that the toxic effects noted, especially the marked mental disturbances, may be due partly, or in certain cases entirely, to some other action of insulin. These are possibilities that need to be recognized in these days when insulin has come to occupy a prominent place in therapy.

THE STORAGE OF WATER IN THE BODY

The extent to which the human body serves as a reservoir of water is rarely appreciated until we are reminded of the facts through the medium of numerical statistics. As water represents little less than two thirds of the entire organism, a person of average weight is the carrier of approximately a hundred pounds (45 Kg.) of the fluid. The disposal of these few gallons of water is regulated to a nicety. Compensation for the losses through the various excretory paths is regularly made by the intake of fluid, together with the contribution of water derived from the oxidative processes in the body whereby hydrogen is converted to water. There are, however, times of stress when the compensatory regulation fails. The balance is upset: water may be lost without being restored; or the excretory organs may fail to remove the surplus with their usual efficiency. Experience teaches what distress may attend either of these eventualities. The extremes are represented in thirst with attendant anhydremia on the one hand, or in the different manifestations of edema on the other. What happens to the water reservoirs in times of unusual stress? A partial answer to this is given by recent observations of Skelton[2] at the University of Minnesota. They confirm the fact that half the water of the body is in the muscles; the skin contains about one fifth; and the blood—the most "watery" of all the tissues—holds only about 7 per cent, or one fourteenth of the fluid.

1. Pendelton, W. R.: Hiccups Among Infants, Am. J. Dis. Child. **34**: 207 (Aug.) 1927.

1. Harrop, G. A., Jr.: Hypoglycemia and the Toxic Effects of Insulin, Arch. Int. Med. **40**: 216 (Aug.) 1927.
2. Skelton, Harold: The Storage of Water by Various Tissues of the Body, Arch. Int. Med. **40**: 141 (Aug.) 1927.

Skelton withdrew water from the body by the device of hemorrhage; and he added water by injection of fluids. Thus he ascertained that, although the muscles lose the least per unit mass of tissue, they give up more fluid than any other tissue when there is marked withdrawal of water from the body; and they also take up by far the greatest portion of any water added per se or as hypotonic salt solution. The liver and intestine appear to respond more quickly than any other tissues when there is an alteration in the water content of the body. The skin is also drawn on in extreme dehydration emergencies. But the main result of Skelton's study is that the muscles represent the most important water reserves of the body. They store the greatest quantity of any excess, and act as a safeguard against the loss of too much water.

Association News

ABSTRACT OF MINUTES OF MEETING OF BOARD OF TRUSTEES, HELD IN CHICAGO, SEPT. 8 AND 9, 1927

The Board of Trustees of the American Medical Association met in regular session, September 8 and 9. At the invitation of the Board, the Council on Scientific Assembly was present, for the consideration of matters relating to the Scientific Exhibit, the motion picture theater and other subjects pertaining to the annual sessions of the Association.

SUBSIDIZED EXHIBITS

After thorough discussion by the Council on Scientific Assembly and the Board of Trustees, it was decided that in the future the general policy will be to have not more than two subsidized exhibits in the Scientific Exhibit any one year, in addition to the exhibit on fresh pathology.

MOTION PICTURE THEATER

It was voted not to operate the motion picture theater at the Minneapolis Session.

PROGRAMS OF THE SCIENTIFIC SECTIONS

Various suggestions concerning the possibilities for making the scientific programs more attractive and for further improving the Scientific Exhibit were given thorough consideration.

DIAGNOSTIC CLINICS

The Council on Scientific Assembly was requested to arrange for diagnostic clinics to be held on Monday and Tuesday before the opening of the scientific assembly at the Minneapolis Session.

PERMANENT SCIENTIFIC EXHIBIT

The possibility of the establishment and maintenance of a permanent scientific exhibit was discussed, and the chairman of the Board of Trustees was authorized to appoint a committee to investigate the matter and to report at a later meeting of the Board.

DATE OF MINNEAPOLIS SESSION

Confirmation was made of the selection of June 11-15, 1928, as the time for the Minneapolis Session.

CHAIRMAN OF LOCAL COMMITTEE OF ARRANGEMENTS

The selection by the Hennepin County Medical Society of Dr. W. A. Jones as chairman of the Local Committee of Arrangements for the Minneapolis Session was confirmed by the Board.

INCREASE IN SUBSCRIPTION PRICE OF THE AMERICAN JOURNAL OF DISEASES OF CHILDREN

In order that the scope of the *American Journal of Diseases of Children* may be extended and further improvements made in the quality of this journal, it was decided by the Board of Trustees to increase the subscription price from $4 to $5 a year, effective Jan. 1, 1928.

ELECTIONS

Dr. Jay Frank Schamberg of Philadelphia was elected to succeed Dr. Milton B. Hartzell (deceased) on the Editorial Board of the *Archives of Dermatology and Syphilology.*

Dr. Oscar T. Schultz of Chicago was elected as an additional member on the Editorial Board of the *Archives of Pathology and Laboratory Medicine.*

INVESTIGATION OF NEGRO HOSPITALS

A request submitted by the Council on Medical Education and Hospitals for authorization to use, from funds already allotted, a sum not in excess of $2,000 for investigation of negro hospitals was approved.

AMERICAN EDUCATION WEEK

The President submitted the nomination of Dr. Charles W. Richardson of Washington to serve as representative of the American Medical Association as a member of the committee for perfecting plans for American Education Week.

SECOND PUBLIC HEALTH CONFERENCE

It was decided by unanimous vote of the Board to call a second conference on public health in February, 1928, to which all reputable organizations engaged in public health activities shall be asked to send representatives.

ASSOCIATION TO BE REPRESENTED AT EIGHTH NATIONAL MEDICAL CONGRESS IN MEXICO

The President of the Association was authorized to appoint a delegate to the Eighth National Medical Congress to be held in Monterey, Nuevo León, Mexico, Dec. 5-11, 1927.

CONFERENCE OF STATE SECRETARIES

November 18 and 19 was selected by the Board as the time for the annual conference of secretaries of constituent state medical associations.

REAPPOINTMENT OF COMMITTEE TO COOPERATE WITH THE COMMISSIONER OF INTERNAL REVENUE AND THE SECRETARY OF THE TREASURY

In accordance with recommendations of the House of Delegates, the Board of Trustees voted to continue the committee to cooperate with the Commissioner of Internal Revenue and the Secretary of the Treasury, with its present personnel.

MODEL PRACTICE ACT FOR DISTRICT OF COLUMBIA

The Bureau of Legal Medicine and Legislation was instructed to give all possible aid to the Medical Society of the District of Columbia in connection with proposed legislation for the control of medical practice.

LIAISON COMMITTEE

On recommendation of the House of Delegates, the Board of Trustees appointed the Executive Committee of the Board (Drs. Walsh, Mitchell and Upham), the General Manager and the Editor to act as the liaison committee between the American Medical Association and the Woman's Auxiliary of the American Medical Association.

Many other matters of importance were considered by the Board and referred to committees or passed for final action until a later meeting.

Exercise Harmless to Normal Heart.—As a point of departure it may be stated at once that nearly all the authorities now writing about the heart are of the opinion that exercise, even strenuous, prolonged and repeated exercise, does not harm the normal heart, and that other functions—those of muscles, lungs and nervous system—will succumb to fatigue before the heart will reach the limits of its marvelous reserve. The mention of such a reserve leads to the assertion of its existence, for it is precisely this reserve of power, this margin of safety, which enables the heart to meet even severe demands on it without suffering harm.—Cole: Exercise and the Normal Heart, *Am. Physical Education Rev.*, December, 1922, p. 475.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. William Groce Harrison, Birmingham, recently celebrated his forty-eighth year in the practice of medicine with a dinner at the Southern Club, previous to departing for Europe on a four months' visit.——Dr. Charles J. Bloom, professor of pediatrics, Tulane University of Louisiana Graduate School of Medicine, New Orleans, held a clinic before the Calhoun County Medical Society, Anniston, July 26.

CALIFORNIA

Laymen Health Officers.—Mr. L. W. Robinson has been appointed city health officer of Oceanside to succeed Dr. Glenn T. Logsdon, and Mr. Homer T. Riddle has been appointed city health officer of Loyalton.

More Plague-Infected Squirrels.—The state health officer informed the Surgeon General, U. S. Public Health Service, August 10, that two groups of ground squirrels from two ranches in the Clayton district in Contra Costa County had been found positive for plague and the diagnosis confirmed by cultures. It will be recalled that a child died of plague in this district, recently, and that it was said to have been infected through contact with ground squirrels.

Child Welfare Institute Opens.—Headquarters for the Laura Spelman Rockefeller Institute of Child Welfare, established at the University of California, will be in an eighteen room, modern house at 2739 Bancroft Way, contiguous to the university campus, October 1. The building will be made fireproof, rooms will be converted into offices, laboratories and nurseries, and there will be a large fenced playground. Specific problems in child welfare to be taken up by the institute are now being considered by the advisory committee of the organization. The director of the institute is Dr. Herbert R. Stolz, Sacramento.

Institute on Prenatal Care.—The leading speaker at the institute on prenatal care held at the Stanford University Hospital, San Francisco, September 7, was Dr. Fred L. Adair, whose subject was "Educating the Mother to Prenatal Care"; among the other speakers were Drs. Reginald K. Smith, C. Frederick Fluhmann and Adelaide Brown. The films "Well Born" and "Sunshine for Babies" were exhibited, and demonstrations of procedures in prenatal care were made by nurses. The institute was held under the auspices of the obstetric departments of Stanford University and the University of California and the bureau of child hygiene of the state department of health.

Joint Session with League of Municipalities.—The health officers' section of the League of California Municipalities will hold a joint session with the entire league, Sacramento, September 20, Dr. Walter M. Dickie, Berkeley, state health officer, giving the president's address, and Dr. Frederick F. Gundrum, Sacramento, vice president, state board of health, the address of welcome. Various phases of the poliomyelitis problem will be discussed by Drs. Charles E. Nixon, instructor of pathology, University of California Medical School; Dr. Walter W. Cress, health officer of Sacramento, and Karl F. Meyer, Ph.D., director, Hooper Foundation for Medical Research. Dr. William F. Cogswell, Helena, Mont., state health officer, will speak on "Rocky Mountain Spotted Fever," and Dr. Meyer on "Malta Fever."

Life Shortened by Noise.—Noise not only affects efficiency but lowers mental productivity and shortens life, according to Vern O. Knudsen, Ph.D., acoustics expert of the University of California at Los Angeles. Noise wears on the nervous system severely, and there is abundant evidence that all of us bear the injuries of this annoyance. In addressing the National Association for Building Owners and Managers, Dr. Knudsen said that noise reduction in buildings is considered one of the most important problems which confront builders. Modern building material augments noise, solid masonry, hard wall plaster and reinforced concrete reflecting about 9 per cent of the sound which strikes them. Two methods are outlined to reduce this annoyance: the introduction of breaks or discontinuities in the walls or partitions and the use of heavy nonyielding structure for walls and partitions and through the use of materials that are sound absorbers.

DISTRICT OF COLUMBIA

Dr. Clark Accepts Professorship at Johns Hopkins.—William Mansfield Clark, Ph.D., of the Hygienic Laboratory of the U. S. Public Health Service, Washington, has accepted the position of professor of physiologic chemistry at Johns Hopkins University School of Medicine, Baltimore.

Personal.—Paul L. Kirby, Indianapolis, has been appointed assistant director of public welfare of Washington.——Dr. James J. Richardson, Washington, has returned from the Canal Zone where he supervised the installation of the eye, ear, nose and throat department of the new government hospital being completed at Panama City.

Birth Rate in District Decreases.—There were 17.05 births per thousand of population in the District of Columbia in 1926, as compared with 18.42 in 1925. The death rate also decreased, being 13.99, as compared with 14.09 for the preceding year. The health officer in his annual report states that diseases of the heart were responsible for the greatest number of deaths. There were only eighty-nine cases of typhoid in the District during the year, the lowest since 1907, when the disease was made reportable. The infant mortality rate declined from 87.3 in 1925 to 84.5 per thousand of population in 1926.

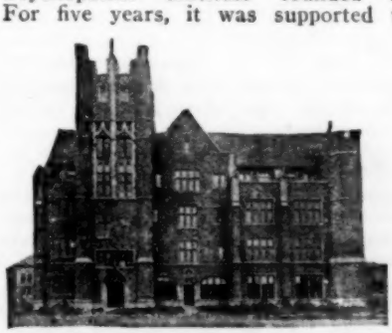
ILLINOIS

Sulphur Lake Springs to Be Health Resort.—The Missionary Workers of the Sacred Heart, a Catholic order of sisters, has acquired Sulphur Lake Springs, 9 miles north of Ottawa on the Fox River, and changed its name to St. Joseph's Health Resort, to be operated for the public throughout the year regardless of class or creed. The dedicatory ceremonies were conducted, September 5, to which the general public was invited. The property includes numerous cottages and a large hotel.

Chicago

Quack Sharma Fined.—H. B. Sharma, 320 East Thirty-Eighth Street, was fined $200 and costs by Judge John A. Trude, recently, for violation of the medical practice act of the state of Illinois.

Illinois Institute for Juvenile Research.—The first behavior problem clinic in America is said to have been the Juvenile Psychopathic Institute founded in Chicago in 1909. For five years, it was supported through the generosity of Mrs. William F. Dummer as an adjunct of the juvenile court of Chicago with the object of discovering the source of delinquency. From 1914 to 1917, its director was Dr. William Healy, and during that time it was a county agency, supported by county funds. The institution became a part of the state department of public welfare in 1917; Dr. Herman M. Adler, who was assistant professor of psychiatry in the Medical School of Harvard University, Boston, accepted the position of state criminologist and became director of the institute, which then changed its name to the Illinois Institute of Juvenile Research. Its usefulness to the community has increased, and other states have established similar clinics. The institute will give any unhappy child in the state an examination to determine how best to utilize his personal assets; it gives mental examinations for the state training school for boys, the state training school for girls, and for other state schools and penal institutions; cooperates with the juvenile court of Cook County; gives regular service to other courts, social agencies and schools; makes surveys, special studies and individual examinations throughout Chicago, and sends traveling clinics to confer with local authorities in fourteen cities outside Chicago. A child brought to the institute is given a complete physical examination, including biochemical tests, an intelligence test, a recreation test, and an interview with a psychiatrist. A complete record of each child is made, with the physical, psychologic, psychiatric and laboratory observations; 10,000 such records are said to be on file at the institute.



Sandwiches in Chicago's Diet.—Chicago is becoming a city of sandwich nibblers, according to the president of the American Bakers' Association, Mr. Henry Stude, who will address the American Institute of Baking at its annual convention, Hotel Sherman, September 26-29. He states that 1,000,000 sandwiches are consumed every twenty-four hours in Chicago; also that the ordinary person gainfully employed eats 400 calories less a day now than he used to. There will be an exhibition at this meeting of sample loaves of bread from every civilized country of the world. The exhibit has been arranged by the U. S. Department of Commerce merely from an educational standpoint. It will include hundreds of loaves of bread made from different grains, among which will be the tortilla of Mexico, the flat bread of Norway, the long loaf of France, and Egypt's "puffball" bread. Contrary to general opinion, Mr. Stude holds that men have done the bulk of the world's baking through the ages; men today make about four out of five loaves of the white bread consumed in America, as well as the majority of the nation's cakes, pies and rolls.

LOUISIANA

Trained Personnel Wanted in the South.—A training school has been established at Indianola, Miss., by the International Health Division of the Rockefeller Foundation for the training of health officers, nurses and inspectors for the seven states affected by the Mississippi flood. While in training at Indianola, physicians will be given $5 a day to cover expenses and nurses and others, $4. The Louisiana State Board of Health announces the need of trained workers, some of whom should speak English and French or English and Italian. The board invites applications from those interested who can give full time. Those selected will be provided transportation from reasonable distances to and from Indianola. The school is in charge of Dr. Charles N. Leach. Those who complete the course satisfactorily will be considered for full-time employment.

New Society Organized.—At a meeting in Leesville in August, which was said to be the largest assembly of physicians in that community, the Sabine, Vernon and Beauregard Tri-Parish Medical Society was organized; Dr. Walter P. Perkins, Gandy, was elected president; the secretaries of the three societies were made the board of directors of the new society. There was a dinner at the Hotel Leesville and an exhibition of medical motion pictures and addresses by Dr. Marion H. Foster, Alexandria, on drainage of the upper urinary tract, and by Dr. Andrew S. Reisor, Jr., Leesville, on intestinal disturbances in children.——The interns of the various hospitals were guests of the Shreveport Medical Society at its annual barbecue, August 2, at Spence Flournoy Place, near Shreveport; about eighty-five persons, in all, were present.

MARYLAND

Examiners of Employees of Oyster Establishments.—The state board of health announces the appointment of the following physicians as examiners of employees of oyster establishments in the sections indicated:

Dr. Merritt Brice, Millington	Dr. Joseph C. Joyce, Annapolis
Dr. Franklin A. Camalier, Leonardtown	Dr. William N. Palmer, Easton
	Dr. I. N. King, Prince Frederick
Dr. Clarence E. Collins, Crisfield	Dr. Walter O. Selby, Rock Hall
Dr. Norman S. Dudley, Church Hill	Dr. Francis J. Townsend, Ocean City
Dr. Daniel A. Fields, Nanticoke	Dr. Charles R. Truitt, Salisbury
Dr. Thomas L. Higdon, Wayside	Dr. Eldridge E. Wolff, Cambridge

State and federal regulations forbid the employment of any person suffering from any "catching" disease or who has infected sores on the hands or arms; applicants for employment at oyster establishments must be inspected by a physician; and applicants suspected of having communicable disease or who have had typhoid or been in contact with others having it must be examined. The medical examinations will be made at the expense of the packers or dealers.

MICHIGAN

Jackson Epidemic Believed Due to Carrier.—The outbreak of typhoid at Jackson which, at last report, amounted to thirty-eight cases with three deaths, is believed to have been due to a carrier who was employed at a local restaurant. She has been isolated. There are said to be thirty-five known carriers of typhoid in the state.

Malta Fever in Michigan.—The state department of health has found fifteen cases of malta fever in various parts of the state. There was a history in each case of contact with aborting cattle, sheep or hogs. The department is investigating the importance of milk as the vector of infection and is examining for agglutinins of malta fever all blood specimens sent in for Widal tests.

Personal.—Dr. Alexander M. Carr, formerly connected with the U. S. Public Health Service and health officer of Madison, Wis., took up his duties with the state department of health, August 1.——Dr. Evan V. Shute, a graduate of the Faculty of Medicine of the University of Toronto, has been appointed a research worker in the department of pathology of the Detroit College of Medicine and Surgery.

Society News.—The Genesee County Medical Society tendered a complimentary dinner, September 9, to Dr. Herbert E. Randall, Flint, president of the state medical society.——A party of about thirty British physicians were entertained at dinner by the Kent County Medical Society, Grand Rapids, September 8.——Dr. Albert M. Barrett, Ann Arbor, addressed the Eaton County Medical Society at its annual picnic at Pine Lake, August 25, on psychiatric problems, and Dr. Charles A. Stimson, Eaton Rapids, on "Rectal Pathology."——A joint meeting of the Alpena County Medical Society and the Northern Michigan Medical Society was held at Indian River, July 21. There was a scientific program and a dinner at which Dr. Guy L. Kiefer, Detroit, state health officer, urged cooperation between the physicians and the state health department.——At the August 2 meeting of the Grand Traverse-Leelanau County Medical Society, Dr. Ralph E. Balch, Kalamazoo, conducted a surgical clinic and at the dinner in the evening reviewed the cases in which operation had been performed in the afternoon. Dr. Roger S. Morris, Cincinnati, and Dr. Edward H. Cary, Dallas, Texas, addressed the society; other guests included Dr. Oscar E. Chase, Chicago; Dr. Huntley, Lansing, and Dr. Otto L. Ricker, Cadillac. The love and esteem of the society was conveyed to Dr. Victor C. Vaughan, who was ill at his summer home at Old Mission.

German Doctor with Several Aliases Arrested in Detroit.—Carl H. Elfes was arrested in Detroit, August 12, for practicing medicine without a license, and has been returned to Minnesota, where he had previously been sentenced to five years for writing fraudulent checks. Elfes, who, it appears, has been known also under the names Karl Robert Otto Elfes and Maximilian R. Schneller, is said to have confessed that he has practiced in various parts of the United States under various assumed names, some of which were Dr. William Sauer, Dr. John L. Refferty, Dr. Rudough Long, Dr. V. D. Whepon, Dr. S. Terstell, and lastly as Dr. Ernest Flehme. He practiced under the name of Schneller at Wahpeton, Mott and Zapp, North Dakota; then on learning that Dr. Ernest Flehme, a reputable physician, had left Detroit to locate on the Pacific Coast, decided to go to Detroit and assume the name of Dr. Flehme, whom he is said to resemble in appearance and whom he claims to have known in Germany. Elfes, alias Flehme, apparently secured the indorsement of responsible persons and was appointed a substitute city physician but was soon dismissed. He claims to have performed many major operations and to have had several arranged for at the time of his arrest. During the World War he was, according to his confession, a spy for France behind the German lines, for which he had been sentenced. Records in these headquarters indicate that a Karl Elfes completed a course at the Grand Ducal Gymnasium, in Vechta, in 1907, and that a Carl Robert Otto Elfes passed an examination before the medical examining commission at Kiel in 1912. Now that Elfes has been arrested, other states and the federal government have business with him. Federal warrants have been issued in North Dakota and Michigan, and he is wanted in the state of Washington for practicing without a license. When released from prison in Minnesota, he may be deported to his native land.

MINNESOTA

Personal.—Dr. Oral B. Bolibaugh, Medical Corps, U. S. Army, has been assigned to duty in the Mayo Foundation, Rochester.——Dr. Alfred Desloges has been granted two years' leave of absence from the Mayo Clinic to take advantage of a fellowship in ophthalmology in Paris awarded him by the University of Montreal.

Society News.—The next meeting of the Association of Resident and Ex-Resident Physicians of the Mayo Clinic will be at Rochester, September 27-29.——Dr. William E. Bannen, La Crosse, was elected president of the Seventh District Medical Society at the recent annual meeting, suc-

ceeding Dr. Herman E. Wolf. The next annual meeting will be at Whitehall.——Dr. Henry F. Helmholz, Rochester, Minn., addressed the Minnesota Academy of Medicine, September 14, at the Town and Country Club, St. Paul, on "Elective Localization of Colon Bacilli in the Kidney," and Dr. Frank J. Hirschboeck, Duluth, on "Massive Collapse of the Lung."

MONTANA

Notes from State Medical Meeting.—The house of delegates of the Medical Association of Montana voted to raise the dues from $5 to $8 annually in order to carry on its business in a suitable manner. The house also voted to make the *Medical Sentinel* the official journal of the association. A committee was appointed at the annual meeting to consider ways to improve the relation between physicians employed by the railways and the railway corporations; it was considered best to organize the Montana Association of Railway Surgeons. This was accomplished, and the officers elected are Dr. Sidney A. Cooney, Helena, president, and Dr. Elmer G. Balsam, Billings, secretary-treasurer. In discussing medical advertising, the house of delegates decided that the best plan for local medical societies was for the society to sign any articles deemed necessary to give to the public, but that there would be no objection to a member writing or signing an article if approved by the county medical society.

NEVADA

Personal.—The governor has appointed Dr. William L. Howell, Gardnerville, a member of the state board of medical examiners.

State Medical Meeting.—The twenty-fourth annual session of the Nevada State Medical Association will be held at Reno, September 23-24, with headquarters at the Hotel Golden. All members are cordially invited, as well as all others who have received official notice.

NEW YORK

Dr. Downing Retires.—Augustus S. Downing, D.Litt., state commissioner of education, retired from active duty to private life, September 1, at Albany. Dr. Downing has given about fifty years' service to public education work and his influence in this field has been recognized publicly on several occasions. James Sullivan, Ph.D., assistant commissioner for higher and professional education, will succeed Dr. Downing.

Changes in Personnel at State Hospitals.—The following have been appointed assistant physicians at the state hospitals indicated: Dr. Joseph L. Camp, Letchworth Village; Dr. John N. Cunningham, Brooklyn State Hospital; Dr. Harry Epstein, Manhattan State Hospital; Dr. Samson Epstein, Manhattan State Hospital; Dr. Eugene Pick, Manhattan State Hospital; Dr. Frederick A. Pitkin, Central Islip State Hospital; Dr. Herbert F. Weinauer, Hudson River State Hospital; Dr. Francis S. Wildner, Hudson River State Hospital. Dr. George W. Mills has been appointed superintendent of the Brooklyn State Hospital; Dr. Louis Pare, pathologist at the St. Lawrence State Hospital, has resigned, and Dr. Z. Rita Parker, assistant physician, Hudson River State Hospital, has resigned.

New York City

Society News.—Dr. Alexander Goldman addressed the Bronx County Medical Society, recently, on "Treatment of Severe Diabetes with Complications," and Dr. George Baehr on "Problems in Metabolism for the Practitioner."

Hospital News.—The West Side Dispensary has obtained permission from the court to place a mortgage of $75,000 on its new building, 446-452 West Forty-Third Street, for the purpose of installing modern equipment.——St. Mark's Hospital, Second Avenue and Eleventh Street, opened a clinic for treatment of diseases of the thyroid, August 23, with Dr. James Hinton in charge.

Personal.—Dr. James B. Murphy, Rockefeller Institute for Medical Research, received the honorary degree of doctor of medicine at the celebration of the five hundredth anniversary of the founding of the University of Louvain.——Dr. Jesse F. Williams, professor of physical education, Teachers' College, Columbia University, has resigned to become medical adviser to Scarborough School, Scarborough, N. Y.——A testimonial dinner was given at the Hotel Pennsylvania, September 14, in honor of Dr. Fred De Kraft by fellows of the American Electrotherapeutic Association, which was in annual session at that time.

NORTH CAROLINA

Memorial to O. Henry.—At the unveiling of a memorial to O. Henry (Albert Sydney Porter) at Calvary Church near Asheville, August 28, Dr. William P. Beall, Greensboro, gave the address. Dr. Beall and Mr. Porter as young men were associated at Greensboro.

Veterinarian Dies of Anthrax.—The city veterinarian of Asheville, H. P. Flowe, D.V., recently died of anthrax after an illness of less than three days. To prevent the spread of the source of infection about forty head of cattle, some horses and a few other animals were promptly destroyed.

Hospital News.—The mayor of Greensboro has appointed a committee of twenty-five leading citizens to study the hospital needs of the community with a view toward coordination of the various activities to facilitate professional and public interests.——The grand jury of Moore County has recommended the erection of a new county tuberculosis sanatorium.——Contracts have been let for additional buildings and other minor improvements to the state hospital for the insane and the state school for the deaf to cost more than $100,000.——Plans have been made for a four story, fireproof addition to the French Broad Hospital, Asheville, costing about $125,000.

Charge Against State Board Unfounded.—During the session of the legislature last winter, in connection with an effort to increase the membership of the state board of health, charges were made that there had been "graft" in the administration of the sanitary privy law. Later the state medical society, in annual session, urged the governor to conduct an investigation to determine the truth or falsity of the charge. This was done by the attorney general in formal hearings at the state capital. A long report of the investigation has been made in which the attorney general states that "no evidence was found that graft had been practiced by inspectors of the state board of health in the enforcement of the sanitary privy law." The governor, in reply, noted that the attorney general had made an exhaustive investigation in which he was "unable to elicit evidence showing any graft or unlawful conduct on the part of any officer, agent or employee of the state board of health."

OHIO

Infant Mortality at Canton and Akron.—Reports from sixty-five cities with a population of 28 million for the week ending August 27 indicate, the U. S. Department of Commerce states, that the highest infant mortality rate (142) was for Canton and the lowest (11) for Akron. The infant mortality rate for these cities for the year 1925 was 76 and 64, respectively.

Quarantine in Franklin County Against Infantile Paralysis.—At a conference of state health officials, the county health commissioner and other physicians in Columbus, August 29, it was decided to forbid all children under 16 years of age from attending public gatherings and from riding on street cars and busses not only in Columbus but throughout Franklin County in an effort to prevent the further spread of infantile paralysis. The baby contest which was to have been held at the Ohio State Fair was abandoned for the same purpose.

Postgraduate Work in Second Councilor District.—The annual course of lectures for physicians in the second councilor district is to be held in Dayton, September 26-30. Members from adjoining counties who desire to attend should address the secretary, Dr. Arthur O. Peters, Dayton. The speakers will be Drs. Aldred S. Warthin, Ann Arbor, Mich.; Winchell M. Craig, Mayo Clinic, Rochester, Minn.; George W. Crile, Cleveland; James Alexander Clarke, Jr., Philadelphia; Philip H. Kreuscher, Chicago, and Charles P. Emerson, Indianapolis. The fee for the course, including the luncheons, will be $10.

Another Family of Physicians.—The longest continuous record in the practice of medicine in Shelby County by any one family is said to be held by the Hussey family. Dr. Stephen C. Hussey located at Port Jefferson in 1848 and continued in practice there until his death in 1871; a son, Allen, practiced in Port Jefferson from 1872 until his death in 1886. Dr. Millard F. Hussey has been practicing in Sidney since 1891, and his son, Dr. Cyril, a grandson of Stephen C. Hussey, is practicing in Sidney with his father. Thus it appears that, with the exception of five years, there has been a Dr. Hussey in practice in Shelby County continuously for about seventy-nine years.

Personal.—Dr. Wilhelm H. Vorbau, medical superintendent, Lima State Hospital, addressed the Kiwanis Club, Ottawa,

August 22, on the cause and prevention of crime.——Dr. Israel S. Millstone, Cleveland, who started out to walk to Los Angeles as a means of regaining his health, is reported to have taken the train at La Junta, N. M., for the remainder of the trip because of the intense heat of the desert.——Dr. and Mrs. Eli G. Alcorn, Columbus, observed their fifty-eighth wedding anniversary, September 16.——Dr. Elmer G. Horton, Columbus, addressed the Kiwanis Club at Coshocton, recently, on "Diseases of Children."——Dr. Henry E. Beebe, Sidney, who recently celebrated his seventy-eighth birthday, has been practicing fifty-four years.

OREGON

License Restored.—A license to practice in Oregon was restored to Dr. Dan E. Standard at the last meeting of the state board of medical examiners. Dr. Standard's license was revoked by the board in 1925; he formerly lived at Warrenton and recently has been practicing in Alaska.

Personal.—Dr. Howard W. Chamberlin, recently an intern at the Seattle City Hospital, has been appointed assistant health officer of the Territorial Board of Health of Hawaii; Dr. Robert L. McArthur, also of the Seattle City Hospital, has gone to Hawaii to become assistant physician in the leper colony.——Dr. William H. Dale has been elected chief of staff of the Pacific Christian Hospital, Eugene.——Dr. Alfred H. Johnston, Heppner, was elected president of the Eastern Oregon Medical Society at the annual meeting at Wallowa Lake, August 6; Dr. Roger Biswell, Baker, vice president, and Dr. John B. Gregory, Wallowa, secretary.——Dr. Jesse Edgington has tendered his resignation as health officer of the city of Hood River after about eighteen years' service.

PENNSYLVANIA

Public Hearing on Laws Relating to Healing Art.—The commission appointed by the governor to study the laws relating to the healing art in accordance with a joint resolution of the state legislature will hold a public hearing in the Clover Room of the Bellevue-Stratford Hotel, Broad and Walnut streets, Philadelphia, November 16-17, 10 a. m. (THE JOURNAL, July 23, p. 301).

Society News.—The Northampton County Medical Society held its annual outing, August 19, at the Country Club, members, their families and guests participating in golf, tennis and bridge. About fifty-two persons were present from Easton, Bethlehem, Stone Church, Nazareth, Bath, Weaversville, Stockertown, Wind Gap, Chapman Quarries and Pen Argyl.——Dr. Harry I. Shoenthal, New Paris, president, Bedford County Medical Society, entertained members of the society and guests at a luncheon at his home, August 11; the speaker was Dr. William S. Wheeling of the Windber Hospital, and his subject, "Diseases of the Gallbladder."——The Third Councilor District Medical Society held its annual meeting at the Irem Temple Country Club, Dallas, near Wilkes-Barre, September 7, to which physicians and their families of the adjoining counties were invited. Among those present were the state health officer, Dr. Theodore B. Appel, and Drs. Harry W. Albertson, Scranton, and Arthur C. Morgan, Philadelphia, president and president elect, respectively, of the state medical association.——The Eleventh Councilor District Medical Society met at the Uniontown Hospital, Uniontown, September 13. A clinical program was presented by the Fayette County Medical Society and addresses were given by Dr. Harry W. Albertson, Scranton, president of the state medical society, Dr. Theodore B. Appel, state health officer, and Dr. Edward B. Heckel, Pittsburgh, chairman, board of trustees of the American Medical Association.——Dr. Jesse R. Cooper addressed the first meeting following the summer vacation of the Lawrence County Medical Society, New Castle, September 1, on "Pitfalls in Diagnosing Abdominal and the Lower Back Conditions."

TEXAS

Health at Dallas.—Telegraphic reports to the U. S. Department of Commerce from sixty-five cities with a total population of 28 million for the week ending August 27 indicate that the lowest mortality rate (6.0) was for Dallas, and that the mortality rate for the group of cities as a whole was 10.0. The mortality rate for Dallas for the corresponding week last year was 10 and for the group of cities as a whole, 10.2.

Society News.—Dr. Walter Herbert Hill, San Antonio, addressed the Brown County Medical Society, July 12, at Brownwood, on "The Acute Heart," and Dr. Isaac Dudley Jackson, San Antonio, on "Treatment of Snake Bite."——Dr. Jack E. Daly, Fort Worth, addressed the Denton County Medical Society, Denton, July 14, on "Duodenal Ulcers."——At a joint meeting of the Hale-Floyd-Briscoe-Swisher Counties Medical Society and the woman's auxiliary, among others, Dr. Robert F. Harp, Paducah, read a paper on "Bedside Diagnosis."——At the July 8 meeting of the Hill County Medical Society, Hillsboro, Drs. Robert B. Giles, Dallas, and David L. Bettison, Dallas, gave addresses on "Clinical Recognition of Coronary Obstruction" and "Importance of Maxillary Sinusitis," respectively.——The Navarro County Medical Society held a July 4 meeting to celebrate the opening of the Corsicana Hospital and Clinic; among others, Dr. John Wilson David, Corsicana, spoke on "Nephritis."——The election held at Brenham, August 16, on the question of a bond issue for the purpose of erecting a county hospital was defeated five to one.

WEST VIRGINIA

Another State Adopts the Kahn Test.—The West Virginia State Hygienic Laboratory announces its adoption of the Kahn test to replace the Wassermann test for the diagnosis of syphilis. The director of the laboratory, Charles E. Gabel, Ph.D., has been studying the new method under Dr. Kahn at the Michigan Department of Health, Lansing.

WISCONSIN

Clinic for Crippled Children.—The Wisconsin Association for the Disabled held a clinic for crippled children, July 23, which was attended by members of the Marinette-Florence County Medical Society; about eighty children were examined. Dr. Frederick J. Gaenslen, Milwaukee, was in charge. Among those present were Mr. Horace J. Nellum, Kenosha, secretary, Nash Motor Company, and president of the association for crippled children; Mr. John Callahan, state superintendent of public instruction, and Dr. Joseph C. Beck, Chicago; Dr. Theodore J. Redelings, Marinette, who was active in promoting the clinic, presided at the dinner.

Dinner to Cuban Physicians.—The faculty of the Medical School of the University of Wisconsin gave a dinner recently at the Maple Bluff Country Club in honor of Dr. Aristides Agramonte, professor of bacteriology, University of Havana, and Dr. Salanos Ramos, dean of the medical school of that university, which was attended by about sixty-four physicians, Pres. Glenn Frank, LL.D., of the University of Wisconsin, and members of several faculties. Dr. Charles R. Bardeen, dean and professor of anatomy, was toastmaster; Dr. Frank welcomed the visitors, who are on a tour of inspection of medical schools, and Dr. Agramonte spoke of health work in Cuba and the development of the medical school of the University of Havana, which was founded in 1728.

GENERAL

Infantile Paralysis Continues to Increase.—Reports from forty-two states to the U. S. Public Health Service for the week ending August 20 indicate the presence of 317 cases of infantile paralysis, whereas in the same states last year at that time, there were only 109 cases reported.

Medical Entomologist Wanted in Egypt.—The state department has advised the U. S. Public Health Service that the Egyptian legation in Washington desires brought to the attention of qualified American citizens the fact that the Egyptian government wants to employ a foreign specialist in medical entomology in the ancylostoma and bilharzia research section of the public health laboratories of the Egyptian government.

Report on Automobile Fatalities.—During the four weeks ending August 13, automobile accidents were responsible for 506 deaths in seventy-seven large cities of the United States, whereas, according to the U. S. Department of Commerce, during the corresponding period last year the number was 499. For the year ending August 13, the total number of deaths in these cities due to automobile accidents was 6,993, whereas for the previous year it was 6,425. Seven cities reported no automobile fatalities for the last four weeks. They were Dayton, Duluth, Kansas City, Kan., Lynn, Schenectady, Springfield, Mass., and Waterbury.

Public Hearing on Enforcement of Caustic Poison Law.—The U. S. Department of Agriculture announces that a public hearing will be held at 216 Thirteenth Street, S. W., Washington, D. C., 10:30 a. m., September 20, on proposed regulations for the enforcement of the federal Caustic Poison Act.

All persons interested are invited to attend. Comments on the proposed regulations may be submitted orally or in the form of letters or briefs. The federal Caustic Poison Act, which became effective March 4, is intended to safeguard users of caustic acids, alkalis and other substances by requiring that parcels or containers for household use be labeled in a certain manner. The law provides also that no penalty should be enforced for violation of the act occurring within six months of its passage.

Regulations for Enforcement of Import Milk Act.—Regulations have just been issued for the enforcement of the federal Import Milk Act, which was passed at the last session of Congress. The law is intended to protect public health and promote the dairy industry. Copies of the regulations and the forms necessary for obtaining permits have been mailed to holders of temporary permits. Other prospective shippers to the United States may obtain copies on application to the Food, Drug and Insecticide Administration, Department of Agriculture, Washington, D. C. The temporary permits will be valid only until such time as funds are available to enforce the new law, when shippers which hold them will be notified of the necessity of submitting proof on which permanent permits may be issued. The regulations explain the procedure for making a physical examination of cows, for applying the tuberculin test, for determining the bacterial count and pasteurizing, and for the sanitary inspection of dairy farms and of factories handling or shipping milk or cream.

Society News.—The American Society of Tropical Medicine will hold its twenty-third annual meeting in Boston, October 21-22, under the presidency of Dr. George C. Shattuck, assistant professor of tropical medicine, Harvard University Medical School, Boston.——At the recent meeting of the Associated Anesthetists of the United States and Canada, Dr. Ralph M. Waters, Madison, Wis., was installed as president, succeeding Dr. John H. Evans of Buffalo.——The next International Congress of the History of Medicine will be held at Rome, in 1930, under the presidency of Dr. Capparoni, but the international society will take part in the Congress of Historical Science to be held at Oslo in 1928.——The second annual meeting of the New England Association for Physical Therapeutics will be at the Statler Hotel, Boston, October 18-20. The program comprises thirty-four numbers. There will be a symposium on treatment of chronic biliary tract disease, a round-table at dinner, Tuesday evening, and a banquet, Wednesday evening, at which the guest of honor will be Rear Admiral Charles F. Stokes, U. S. Navy; the honored guests, Drs. William B. and Mary L. H. A. Snow, and the toastmaster, George J. Ott; $3.50 per person; all are invited. A posture film from the U. S. Department of Labor will be exhibited, Thursday afternoon.

Mississippi Valley Conference on Tuberculosis.—A new feature of the conference this year, which will be held at St. Louis, September 26-28, will be the health officers' luncheon, Tuesday noon, to which all health officers or directors are invited. The health commissioner of St. Louis, Dr. Max C. Starkloff, will preside and the health commissioner of Chicago, Dr. Herman N. Bundesen, and the director of Phipps Institute, Dr. Charles J. Hatfield, Philadelphia, will give addresses followed by an open discussion. The conference program is made up of addresses by prominent laymen interested in this work, by field workers and by physicians, some of whom are Dr. Linsly R. Williams, managing director, National Tuberculosis Association; Dr. Ethan Allen Gray, Chicago, president of the conference; Dr. Malcolm A. Bliss, St. Louis, president, Missouri Mental Hygiene Association; Dr. Merrill M. Myers, Des Moines, president, Iowa Heart Association; Dr. Leroy Sante, St. Louis, and Drs. Joseph. Brennemann and Harry S. Gradle, Chicago. There will be a tuberculosis clinic by Drs. Evarts A. Graham and Selig Simon, St. Louis, and a dinner dance, Tuesday evening, following the address of Dr. Henry Boswell, Jr., medical director and superintendent of the Mississippi State Tuberculosis Sanatorium, Sanatorium. Headquarters will be at the Hotel Statler, Washington Avenue and Ninth Street.

New Chief of Bureau of Chemistry and Soils.—Henry G. Knight, since 1922 dean, College of Agriculture and director, experiment station, University of West Virginia, has been appointed chief of the new bureau of chemistry and soils of the U. S. Department of Agriculture, effective, October 1. Dr. Knight was born in Kansas in 1878; he graduated from the University of Washington in 1902 and received his Ph.D. degree from the University of Illinois in 1917; he was state chemist at Wyoming, 1904-1910; director of the Wyoming Agricultural Experiment Station, 1910-1918, and dean of the college of agriculture and director of the experiment station, Oklahoma A. and M. College, 1918-1921. The new bureau of chemistry and soils combines three research fields formerly represented by the old bureau of chemistry, the bureau of soils and the fixed nitrogen research laboratory. The new bureau was provided for by the last Congress; and while each of the foregoing groups will maintain its identity, they will now be associated in a way to facilitate the fullest cooperation and coordination of the research work. The research work in chemistry and chemical technology, embracing fifteen divisions, will be in charge of Charles A. Browne, Ph.D., chief of the former bureau of chemistry, who will also act as associate chief of the new bureau. He will, however, at his own request, devote his major energy to research. Frederick G. Cottrell, Ph.D., will continue as head of the fixed nitrogen and fertilizer research group of the divisions. Arthur G. McCall, Ph.D., formerly of the University of Maryland, has been appointed head of the soils work of the new bureau of chemistry and soils.

Joint Meetings in Chicago.—The Illuminating Engineering Society will hold its annual meeting at the Edgewater Beach Hotel, Chicago, October 11-14; among the subjects of especial interest to physicians will be "Spectral Characteristics of Light Sources and Window Materials Used in Therapy," W. W. Coblentz, and "Preliminary Report of the Measurement of Variation of Energy in the 'Vita Spectrum' of the Sunshine in Kansas," J. S. Hughes. The society will hold a joint meeting with the National Committee for the Prevention of Blindness, Thursday afternoon; among the subjects to be discussed will be "Four Fundamental Factors in Seeing," J. W. Cobb and F. K. Moss, and "How We Learn to See and How We Learn Some Other Things," W. T. Bovie, Ph.D. Thursday morning, the committee will hold a joint session with the Illinois Social Hygiene League; among the discussions will be "Bacterial Invasion of the Birth Canal" and "Syphilitic Eye Tragedies and Their Prevention." The committee will hold a joint session, Friday morning, with the National Safety Council; among the subjects will be the "Effect and Control of Injurious Invisible Light Rays in Industrial Occupations from the Medical, Research, and the Practical Shop Point of View." There will be a joint session also with the Chicago Ophthalmological Society, Friday evening, and with the Illinois Society for the Prevention of Blindness, Friday afternoon. Saturday morning, the general topic will be sight-saving classes; in the afternoon, trachoma as a public health problem will be the general subject of a joint session with the Standing Committee on Conservation of Vision and the Conference of State and Provincial Health Authorities of North America, followed by a round table discussion.

FOREIGN

Personal.—Prof. L. Boez of the Hygienic Institute of the University of Strasbourg has been appointed director of the Pasteur Institute at Saigon, French Indo-China.

Professor Howden Resigns Chair of Anatomy.—Prof. Robert Howden, for thirty-eight years professor of anatomy at the College of Medicine, Newcastle-upon-Tyne (University of Durham), has resigned and been elected emeritus professor; Dr. Howden is the editor of Gray's Anatomy, the twenty-third edition of which was recently published; he has been the representative of the University of Durham on the medical council since 1918.

Infantile Paralysis in Roumania and Hungary.—More than 300 children in Bucharest have been stricken with infantile paralysis, according to press reports, and the disease is present in most of the Roumanian and Hungarian frontier towns. A quarantine has been established along the border. Delegates to the biennial congress of pediatricians in session at Budapest are assisting in an attempt to check the epidemic, and Austria is reported to have sent a medical commission from Vienna to the affected areas to assist.

Deaths in Other Countries

William Jones Greer, author of Industrial Diseases and Accidents, formerly a member of the central council of the British Medical Association and secretary of the section of surgery and the electrical section, chairman of the committee on fractures and president of the South Wales and Monmouthshire Branch, August 3, aged 59.——**Charles Wilberforce Daniels,** formerly director of the London School of Tropical Medicine and physician to the Albert Dock Hospital, aged 65.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Aug. 27, 1927.

The Combating of Venereal Diseases in the British Empire

Great progress in the means of combating venereal disease throughout the British Empire has been made during the current year, according to the official account of the British Social Hygiene Council. A special effort was made as regards India, where it was found that in the various provinces visited congenital syphilis was prevalent, and that the social conditions were such that venereal diseases were disseminated among the adolescent as well as among the adult. Many recommendations were made, including increased hospital accommodations, antenatal beds and postnatal care, while it was also urged that there should be improved training of physicians and improved treatment of venereal disease, and a free bacteriologic service. From the purely educational standpoint emphasis was laid on the importance of biologic teaching, while from the social standpoint it was recommended that full information be given in order that, once public opinion had been aroused, the commercial interests in prostitution might be penalized, and that cinema films unsuitable to India should be banned. The central government of India has been invited to provide for the diagnosis and treatment of venereal disease, and for recreational facilities for the mercantile marine; also to cooperate with the provincial governments in securing the services of a biologist and psychologist during the winter season of 1927-1928 to initiate the additional teaching of biology and social hygiene. Furthermore, with the help of the government of India, the British Social Hygiene Council through an India advisory committee should make itself responsible for the Indianization of dramatic films for propaganda purposes. In each of the provinces visited, Bombay, Bengal, Burma, Madras, the Indian states of Mysore and Baroda, and also the island of Cyprus, social hygiene councils affiliated with the British Social Hygiene Council have been established. Similar progress was reported from other parts of the empire, though the council has to deplore that in Ceylon there is local agitation to remove the salutary embargo that exists on unauthorized persons visiting ships in port.

During the past year many conferences have been held and others are in progress. Among the points raised are the necessity of technical education of physicians by experts, and provision of decent short sleeping accommodations and recreational facilities in the colonial ports for the mercantile marine. The mercantile marine has occupied the attention of the council, and the main objectives have been to provide proper facilities for treatment and adequate recreation of all sorts.

The whole issue of broadcasting has been raised, and while the general position is under consideration, talks on biology and physiology have been given by Prof. Julian Huxley and Prof. Winifred Cullis.

The council has supported the proposal made by the Commonwealth Fund of America as to the establishment of a child guidance clinic in England. It has also urged that the Medical Research Council should promote investigations that may lead to the discovery of an effective cure for gonorrhea.

Chinese Translation of the British Pharmacopeia

The translation into Chinese of the British pharmacopeia (slightly abridged) which has been undertaken under the joint authority of the London Chamber of Commerce and the British Chamber of Commerce, Shanghai, has just been published. The primary object is to familiarize the Chinese physicians and students of medicine and pharmacy with official British pharmaceutic preparations. The proposal to make the translation dates from May 25, 1921, when a meeting of the chemicals, dyes and drugs subcommittee of the British chamber of commerce, Shanghai, recommended that the general committee of the chamber issue the necessary authority. The translation has been made by Dr. C. L. Kao, a member of the Chinese terminology committee. The translation was begun in 1924, and by the early spring of 1925 was sufficiently advanced for the authorities of Shantung Christian University, under Dr. McCall, to begin the work of revision, which they had previously promised.

Medical Examination Before Marriage

In a letter to the *World's Health*, Major Leonard Darwin, president of the Eugenics Education Society and son of Charles Darwin, discusses medical examination before marriage. He holds that the careless and unscrupulous will be especially prone to neglect or avoid any restrictions on marriage, with the result that any legislative safeguards may tend to result in undesirable unions, both legitimate and illegitimate, being more often contracted among the inferior than the superior types. The consequent tendency to relative increase in the rate of multiplication of the less fit must have a dysgenic effect—a consideration which at all events points to great forethought being exercised before any restrictions are placed on marriage. Major Darwin therefore holds that prenuptial medical examinations should not be made compulsory. Moreover, in order to make such examinations truly effective they would have to be conducted by an official designated by the state. This would place far too much power in the hands of any one man, more especially as a cheap system of appeal against his judgments could not easily be organized. Such examinations should be encouraged and facilitated in every possible way but should not be enforced. The deposit of a medical certificate being made a necessary preliminary to marriage is open to less serious but similar objections. If the physicians empowered to give such certificates are in any way selected by the government, abuses are likely to arise or, at all events, to be feared. On the other hand, if any physician could sign the certificate, and if the applicant could go to one after another, all bound to secrecy, until he found a physician ready to sign, would not this be a precaution of little value in those cases in which it was most needed? Again, if the declaration to be signed was to the effect that the applicant is free from certain diseases, would not the honest physician often find himself in a difficult position? On the other hand, if the declaration was to be only to the effect that no symptoms of certain diseases had been discovered, the physician would often find it difficult to refuse to sign even if doubts had arisen in his mind, while an unscrupulous one could often safely sign when he really had grave suspicions. Major Darwin thinks that the best plan would be to demand from each party before marriage a declaration of the belief that he or she was free from certain specified infectious diseases; for this could not fail to be beneficial both in the promotion of medical examinations and in general educative effect. Possibly the name of a physician should be added, who would answer inquiries made by or on behalf of the other party. The point Major Darwin wants to emphasize is, however, that when legislation regarding marriage is under consideration, the opportunity should be seized for including other safeguards likely to have eugenic effects. The prenuptial declaration should include a statement that he or she had never been confined in a lunatic asylum, in an institution for mental defectives or in prison, or had been previously married or had been divorced. When such a statement could not be truthfully made, the reason why should be stated. False declarations should be punished.

Again, to promote the marriage of a certified lunatic or mentally defective person should be made a punishable offense. Not all such marriages, however, are objectionable, and arrangements should be made so that they might be permitted when there was no probability that procreation would be possible. Such regulations as the foregoing would tend to stop undesirable unions, and they would therefore be beneficial to the race.

The Good Health of Coal Miners

A committee of well known persons, under the auspices of the New Health Society, the National Institute of Industrial Psychology, and the Sunlight League, has been formed with the object of organizing treatment of coal miners with ultraviolet rays. It is stated in the press that miners suffer most from the "diseases of darkness," particularly tuberculosis, rickets, anemia, arthritis, stunted growth, rheumatism, and skin diseases. Hence the selection of mining for the treatment. In a letter to the *Times*, the physiologist J. S. Haldane, F.R.S., who is also president of the Institution of Mining Engineers, points out that there is no evidence whatever for concluding that coal miners as a class are especially subject to the diseases in question. It is true that the public is familiar with the expression "miners' phthisis," and has perhaps often also heard of "miners' anemia." "Miners' phthisis" is now well known to be a disease produced by the inhalation of certain varieties of silicious dust and to affect miners exposed to these dusts in the metalliferous mines where they exist. It does not affect coal miners as a class; and coal miners suffer so exceptionally little from phthisis that their relative immunity from death by phthisis practically balances their exceptionally high death rate from accident. "Miners' anemia" is only another name for ancylostomiasis, or hookworm disease. It is especially a tropical or subtropical disease; but, as in European countries it was first encountered in mines, where the temperature required for the development of the larval stage of the worm exists, it was called "miners' anemia" by the French physicians who first accurately described its occurrence in the coal mines of the north of France at the end of the eighteenth century. Being ignorant of its actual cause, they attributed it to the gases in mines. "Miners' anemia" does not exist in British coal mines, though twenty-five years ago it was found to be widely prevalent in Cornish tin mines, and was then promptly dealt with by suitable vermicidal treatment and sanitary precautions. Haldane considers the alleged special susceptibility of coal miners to the other "diseases of darkness" as devoid of foundation as their supposed special susceptibility to phthisis and anemia. The one coal miner's disease, nystagmus, which is known to be due to the defective light given by the present safety lamps is not likely to be prevented by ultraviolet ray treatment, or anything else but the improved safety lamps toward which vigorous efforts are at present being directed. Statistical evidence shows that coal mining in this country is on the whole an exceptionally healthy occupation.

Colony for Psychopathic Patients

A scheme for the establishment of a colony for mental defectives in Hertfordshire which shall be the most completely equipped in the world has been put before the Middlesex County Council and is now under the consideration of the minister of health. An area of 1,167 acres containing beautiful well wooded grounds has been purchased. It is proposed to accommodate no fewer than 4,000 patients and a resident staff of 1,000, consisting of physicians, nurses, clerks, attendants and others. It is not an asylum which is proposed, but a communal village with cottages, villas, farms, an assembly hall, a church, a concert hall and cinema, workshops, a laundry, a school, a recreation hall and a hospital. In a reception hospital standing apart from the rest of the colony will be observation wards and equipment for making thorough tests with a view to preventing any but necessary cases from ever passing to the hospital for the insane. Another section, which will stand apart, is provided for dangerous cases. Many of the patients will be employed on the farms. Cottages will be provided for harmless aged people, and besides the school and recreation hall there will be pavilions and cottages especially for child defectives. Every kind and stage of mental deficiency is provided for in the most approved manner. The scheme marks a new departure in institutions for the insane. The estimated cost is $10,000,000.

PARIS

(From Our Regular Correspondent)

Aug. 16, 1927.

Erection of a Statue to Vulpian

The municipal council of Paris has approved the erection of a statue to the celebrated physician and physiologist Vulpian, whose researches on the nerves and vasomotor phenomena are universally known. The statue, the work of the sculptor Paul Richer, member of the institute, will be placed near the Faculté de médecine.

French Congress of Medicine

The nineteenth congress of the Association des médecins français will be held at Paris, October 11-15. The president and general secretary of the society are Prof. Pierre Teissier and M. E. Rist, respectively. The opening assembly will be held at 9:30 a. m., Tuesday, October 11, in the large amphitheater of the Faculté de médecine, under the honorary chairmanship of the minister of public instruction. The following topics will be discussed during the five-day session: (1) semeiology of medical septicemia; general semeiology of the septicemic state, by P. Gastinel and J. Reilly of Paris; clinical types of acute and chronic specific septicemia with known and unknown virus, by P. de Vezeaux de Lavergne of Nancy; clinical types of acute or chronic nonspecific septicemia, by F. Arloing, P. Dufourt of Lyons and L. Langeron of Lille; (2) the physicopathology of edemas, a study on the rôle of certain ions and the variations in their distribution in the pathogenesis of edemas, by E. Aurel and P. Mauriac of Bordeaux; rôle of the physicochemical properties of proteins in the pathogenesis of edemas, with a study on the variations of osmotic and capillary pressure, by P. Govaerts of Brussels; the edemas of Bright's disease, by Pasteur Vallery-Radot and P. Nicaud of Paris, and (3) the medical indications and the comparative therapeutic value of splenectomy; splenectomy in hemolytic processes, by N. Fiessinger and P. L. Brodin of Paris; splenectomy in anemic processes and in parasitic and infectious anemias, by A. Nanta of Algiers, and pernicious anemia and leukemia, by J. Tapie of Toulouse. During the congress a number of festivals and receptions will be organized. In addition, the conventionists will be invited to visit an exhibition of medical journals and books, hygienic and roentgenologic apparatus, laboratory instruments, and pharmaceutic and dietetic products. The celebration in commemoration of Villemin will be held immediately after the congress. General information in regard to the congress (registration, expense, train and steamboat service, passports, engagement of rooms, and sending of papers) will be given by M. Masson, éditeur, 120 Blvd. St. Germain.

The Proposed Chair of the Medicosocial Aspects of Tuberculosis

Councilor Léopold Bellan recently presented before the general council of the Seine a series of arguments in favor of the creation at the Faculté de médecine of a chair dealing with the medicosocial aspects of tuberculosis. This would

place before medical students the medicosocial problems connected with tuberculosis, and provide training for specialists for the management of antituberculosis institutions. Several foreign universities have recognized the imperious need of special instruction in tuberculosis, notably the United States, Canada and England.

French Congress of Otorhinolaryngology

The next Congress of Otorhinolaryngology will be held in Paris, at the Faculté de médecine, Oct. 17 to 20, 1927, and will be presided over by Professor Collet of the Faculté de médecine of Lyons. The topics on the program are: (1) therapeutic indications in tuberculosis of the larynx; speaker, M. Caboche; (2) nasal respiratory insufficiency; speaker, M. Worms. As in previous years, there will be an exhibit of apparatus, instruments, books, and pharmaceutic products pertaining to otorhinolaryngology in the Great Hall of the Immortals at the Faculté de médecine.

Course of Instruction for Nurses

October 1, the school of child training at the Faculté de médecine of Paris (64, rue Desnouettes) will begin a course of instruction for nurses and midwives, which will comprise (1) an elementary course leading to the granting of a certificate, and (2) a higher course, on the completion of which a diploma will be given to successful candidates. The management of the school has announced that there is an increasing number of vacancies open to pupils holding diplomas.

Village Colonies for the Tuberculous

Villages for the tuberculous are a creation of relatively recent origin, and the first results obtained are encouraging. The personnel, the merchants, and others, being persons in need of treatment, many of the disadvantages of the tuberculosis sanatorium are avoided; namely, large expenditure for the patient or for the group, and interruption of the social life and of the normal activity of the patient, resulting in discouragement. The villages established thus far are few and have been created somewhat by way of experiment. M. Pierre Rameil, member of the chamber of deputies and former undersecretary of state for technical instruction and the fine arts, who has recently made a special study of this important problem, recommends that a large number of such villages be established and that they be organized according to a definite plan. The selection of patients would be made by the physicians, who would separate, when need be, subjects suffering from tuberculosis in an active state from those who are improving and those who are merely predisposed to the disease. Rameil calls attention further to the part that would be played, in the creation of these villages, by the centers of vocational guidance and technical instruction. Thus the premature return of subjects, incompletely cured, to their old environment, where their condition might again become bad, and where they might infect other persons round about them, would be avoided.

Social Movements

The creation of a number of new dispensaries is planned by the municipality of Paris, which already grants financial assistance to thirty or more dispensaries, centers for the protection of mothers, and free milk stations. The General Council of the Seine has recommended furthermore the creation at Antony, in the suburbs of Paris, of a service devoted to the care of abandoned infants. Owing to the fact that a considerable number of infants with hereditary syphilis are received, measures of protection against possible contaminations will be taken. It has been observed that inmates of institutions for the rearing of young children present various pathologic conditions, especially following a change in their diet. In order to prevent such manifestations, infants will be placed under observation for two months before they are sent to such centers. During such observation period, they will be gradually accustomed to the food they will receive in the provinces; namely, cow's milk diluted with water. This will be accomplished by subjecting them to a succession of regimens as follows: a mixed diet composed of mother's milk and buttermilk, artificial diet with buttermilk and condensed milk, artificial diet with condensed milk and ordinary milk, and, finally, artificial diet with ordinary milk such as is used in such child-rearing centers. Weakly infants, and those affected with hereditary defects, will be placed for a year or more in special services.

The Centenary of Villemin

An organization committee has been appointed to plan the ceremonies to be held in October in celebration of the centenary of the birth of Villemin. Villemin was *médecin inspecteur* of the army medical service, and the year of his death (1892) he was vice president of the Academy of Medicine. While agrégé professor at Val de Grâce, he demonstrated (1865) that tuberculosis is contagious and inoculable, which was in opposition to the opinion generally held at that time. This was made seventeen years before the isolation of the tubercle bacillus by Robert Koch.

Education of Deaf, Dumb and Blind Girls

The Académie Française has awarded one of the Fabian prizes to M. Louis Arnould, professor at the Faculté des Lettres in Poitiers, for his volume entitled "Souls in Prison," which has reference to those who, on account of being deaf, dumb and blind, cannot communicate with the rest of humanity. The bestowal of this prize has called attention anew to the Oeuvre de Larnay, located between Poitiers and Bordeaux, where the methods employed are satisfactory and the progress of the pupils rapid. The institution receives only girls and young women. The enrolment at present is 270, and, during the recent visit of Swedish students belonging to the Franska Skolan in Stockholm, it was presented as a model of its kind.

MADRID

(From Our Regular Correspondent)

Aug. 5, 1927.

Present Status of Ferrán's Tuberculosis Vaccine

Dr. J. Ferrán is supervising the trials of his tuberculosis vaccine under way in several Spanish communities. On his reaching Madrid the National Tuberculosis Association appointed him honorary president. The present government is supporting the use of Ferrán's vaccination as a preventive measure against tuberculosis. At Buenos Aires, Dr. J. T. Vacarezza tried Ferrán's method in the foundling home. A comparative study showed that after instituting the vaccine the general mortality had decreased 50 per cent among the 700 inmates, while the tuberculosis mortality dropped to zero. At Córdoba, Argentina, Dr. Soria of the medical school secured similar results. In Spain the new method is being tried at thirty orphan homes. The National Tuberculosis Association and the government are urging an extensive trial of Ferrán's method. The vaccine is furnished free by its discoverer to public health and charities organizations, provided they agree to keep trustworthy records.

Medical Teaching in Spain

España Médica, an old Madrid medical journal, asked Dr. Recasens, the dean of the Madrid medical school, for an opinion on the present status of medical education in Spain. Dr. Recasens stated that the most essential need is to provide existing schools with the necessary material and facilities. While the present ridiculous clinics with from

eight to twelve beds continue, while some students cannot even attend a normal labor case and while the scarcity of assistant professors and instructors persists, all suggested changes in curriculums lead nowhere. In order to learn medicine there must be a dissecting room with sufficient bodies for all the undergraduates, well equipped physiologic, anatomic, pathologic and histologic laboratories, and especially clinical facilities. It seems incredible that with so many municipal, provincial and government hospitals, such a small proportion should be devoted to teaching purposes. As to the limitation of medical students, Recasens agrees with the dean of a Boston medical school that no more students must be admitted than can be taught properly.

"The University City"

The present king wants to connect his name with the so-called "University City" or student district. This city, as the name suggests, will include buildings for the several departments of the Madrid University and in addition dormitories for the students now scattered and often but poorly lodged all over town. The king, to further the idea, suggested that rather than other gifts and memorials, intended to celebrate his accession to the throne, a national subscription should be started, the proceeds of which would be turned into the university fund. The government is also trying to bring money in from all sources for the same purpose. As a wag said, after sufficient funds are at hand, organization will prove most easy. It will be enough to organize things just the opposite to the present arrangement.

Increasing Hardships on Physicians

The medical profession has suffered greatly from the present high cost of living. On the other hand, it had proved impossible to raise fees because of the increasing competition among physicians. Furthermore, the treasury department has taken charge of collecting the professional tax, so far left in the hands of the local medical societies. A recent decree raised taxes to four times the previous amount. Those who know the real situation were therefore astonished at an article by a prominent sociologist advising a medical career for high school students.

A Miraculous Spring in a Physician's Home

Some time ago, Dr. Forns, as prominent through his laryngologic work as through his skill at painting, bought a thirteenth century mansion, the former home of Iván de Vargas, whose servants included two of the most noted Spanish saints. Tradition has credited San Isidro with the discovery of a number of springs in different places in Madrid and, in addition, with saving the life of a child who fell into the well of the Vargas home. As San Isidro's day occurred recently a newspaper published a number of pictures of Forn's artistic home. An interview with a servant disclosed that the present owner allows free access to the grounds to the numerous crowds in search of health, wealth and other miracles. One girl insists that there is no question as to the wonderworking powers of the well. For several months she went there daily to drink water and pray for the return of her sweetheart, a soldier in Morocco. The gay private forgot to come back, but the eye of a blacksmith fell on the pretty girl, kneeling by the well. The date for the wedding has already been set.

Spain and Medical Tourists

A number of medical parties have visited Spain this year. In the last few weeks, quite a number of Belgian physicians arrived, and then a similar group from London. Among the entertainments to the Belgians was a reception by the Duke of Ferán Núñez who owns also several palaces and much real estate in Belgium. It is the first time since the religious wars in the sixteenth century that Spaniards and Belgians have really fraternized. The reception tendered by the Madrid medical profession to the British surgeons was attended by more than 2,000 guests.

Original Propaganda

The Spanish agent of a foreign pharmaceutical house has ordered well done silhouettes of the best known, about 800, Madrid physicians. At the same time he ordered paintings of all the façades and assembly halls of medical buildings in Madrid. These pictures have been made into albums for free distribution abroad. In addition, the original collection is used for decorating halls where entertainments are given and the funds collected are turned over to the medical orphans' home.

ITALY

(From Our Regular Correspondent)

July 31, 1927.

Tar Cancer

A case of tar cancer was recently described by Dr. Balduzzi of the Clinica Dermosifilopatica in Padua, as occurring in an old man who, for many years, was engaged in building boats and covering them with pitch. The skin changes, consisting of lesions of various types (pigmentations, folliculitis, varicosities, and the like), were found on various parts of the face and limbs. When subjected first to radium therapy and then to surgical intervention, the tumor retrogressed. This is one of the few cases of tar cancer ever described in Italy. In England, 133 cases were reported during the period 1920-1923.

An Information Bureau for Physicians

A bureau of information of a technical and scientific nature has recently been established at Turin under the title "Ufficio pro Medico," or physicians' bureau. Its purpose is the promotion of intellectual and cultural relations, in the medical field, between Italy and other countries, and the diffusion in foreign countries of Italy's contributions to medicine.

An International Prize Contest

An international prize contest has been opened for experimental researches on the subject of the phonendoscope, the phonendograph and the phonendometer, all of which have a practical application in symptomatology. The amount of the prize, which bears the name of Aurelio Bianchi, is 10,000 liras, or $543. The contest will be held, May 18, 1928. The examination of the articles presented will take place at the University of Perugia.

The Crusade Against Trachoma

At a recent session of the Associazione dei medici specialisti of Palermo, Professor Tristaino discussed the present conditions in that city with regard to trachoma. The number of cases has decreased, but the incidence is nevertheless still high. In the opinion of the speaker, measures against trachoma hitherto have been inadequate. In 1924, a school for trachomatous pupils was established but has not produced many results.

An examination of statistical data from the records of the Clinica Oculistica reveals the following facts: The incidence is highest in early childhood (33.33 per cent). At that age the active type (about 76 per cent of the cases) predominates, while the chronic forms increase steadily with the age of the patients, reaching 83.26 per cent in old age. The percentage of complications, which is low in the early years (3.97 per cent in the first five years, 9 per cent in the 5 to 10 age group), increases in proportion to the age of the

patient (17.72 per cent in the 10 to 15 age group, and 37.75 per cent in middle age).

Treatment should be directed therefore chiefly toward patients in early childhood. The school for trachomatous pupils should be a sanatorium and solarium combined. The children should receive instruction in hygiene. The sanatorium should be in a position to treat not only the eye disease but also the miserable general state that always accompanies it.

The city needs one school for trachomatous pupils in each *rione* or ward of the city. Municipal supervision should be extended also to private institutions of learning. Before a pupil is admitted to any school he should present a certificate showing that he has submitted to examination; he should also be examined periodically during the course. Supervision should include children's homes. The proposals of Professor Tristaino will be communicated to the municipal authorities of Palermo.

Reorganization of Hospital Services in Rome

The national government is planning to reorganize the hospital services in the city of Rome, and has entrusted the work to Cotta, who bears the title of "*presidente*" of Roman hospitals. For hygienic or technical reasons the present hospitals of S. Giacomo and Consolazione will be abolished, and a new hospital, the Ospedale del Littorio, will be erected on Monte Verde. The new institution will cover an area of 28 hectares, or nearly 70 acres. It will comprise six medical and three surgical departments, special ophthalmologic and otorhinolaryngologic departments, and an isolation ward. It will have a bed capacity of 1,240. The government expects to be able to open the hospital in 1929.

The Antirabies Dispensaries

According to information furnished by Professor Puntoni, assistant director of the antirabies institute of Rome, the first antirabies dispensary was opened, in Italy, at Suzzaro in 1923. In 1924, dispensaries were opened also at Arezzo, Aquila, Leghorn and Macerata. Since 1924, several other dispensaries have been established in various cities, and many more are being organized in Italy and in the colonies. It is the duty of the dispensaries to visit all persons reported bitten in the territory of their jurisdiction, and decide whether special treatment is needed or not. If treatment is needed, they must supply it and must report cases of canine rabies to the sanitary authorities, and aid in the prophylaxis. During the three-year period 1923-1925, the number of persons inoculated in these dispensaries was 1,274. The mortality was 0.16 per cent, which is approximately the same as was reported from the antirabies institute in Rome.

International Congress of Medical Hydrology

October 12-16, the International Congress of Medical Hydrology will be held successively in Rome, Bagni di Montecatini, and Terme di Salsomaggiore. The opening meeting will be held in Campidoglio, October 12. The official topics on the program are: (1) hydrotherapy in acute diseases; speakers, Professor Gabbi of Parma, Professor Straper of Vienna, Willcox, and Fox, and (2) the waters of Chianciano; speaker, Prof. V. Ascoli of Rome. October 14, the new *stabilimento termale* at Montecatini will be dedicated, and Professor Queirolo (senator of the realm) will speak on the waters of Montecatini. Communications on "The Properties of Medicinal Waters" will follow. October 16, the conventionists will assemble at Salsomaggiore, where Professor Zoia of Milan will speak on the waters of Salsomaggiore, and Professor Zoerkendoffer of Prague will deliver an address on "The Aging Processes of Mineral Waters."

BERLIN

(From Our Regular Correspondent)

Aug. 13, 1927.

Increase of Diphtheria

Since the introduction of diphtheria antitoxin in 1894, the morbidity and the mortality of diphtheria have decreased. In Berlin, since the beginning of 1926, the number and the character of diphtheria cases have undergone a change, and cases of malignant diphtheria have been observed, together with a rather high mortality. The special characteristics are foul smelling discharge from nose and mouth, marked glandular swellings, and all the symptoms of vascular disturbances, including numerous hemorrhages. In the majority of these cases, after a relatively short illness, death ensues from cardiac paralysis, supplemented by a grave kidney involvement. Last year, two members of the department of infectious diseases of the Rudolf-Virchow municipal hospital published a report on the cases occurring in that hospital. The percentage of fatal cases increased from 6 in 1923 to 17 in 1926, and in Old-Berlin the total number of diphtheria cases increased from 1,068 in 1923 to 1,421 in 1926, and the percentage of mortality rose from 7.58 to 11.1 per cent. The statement was made that, in these cases of grave diphtheria, diphtheria antitoxin often fails to protect. Only by beginning the treatment at the earliest possible moment and employing the maximum doses was there any prospect of preserving life. On the average, 20,000 units was injected intravenously and 20,000 units intramuscularly; often, however, further doses of from 10,000 to 20,000 units were injected on the following days. For a period of three weeks, daily doses of 1,000 units were administered intramuscularly. In the *Deutsche medizinische Wochenschrift*, the observations made in the Rudolf-Virchow Hospital have been confirmed by Professor Finkelstein and his assistants in the municipal Children's Hospital. They, also, saw many severe cases of diphtheria, and they, too, are of the opinion that in most of the cases there was a streptococcus infection. They could not accomplish much with diphtheria antitoxin. For that reason they had employed the streptococcus antitoxin of Prof. Fritz Meyer of Berlin, prepared by the Höchster Farbwerke. This antitoxin is obtained by immunizing horses with highly virulent streptococci and also with a highly potent streptococcus poison. The marked advantage of this antitoxic serum as compared with all other streptococcus serums lies in the fact that its potency is assured not only by a so-called polyvalence but also because it contains demonstrable antitoxins against the poison common to all streptococci. Professor Meyer and his co-workers have worked out methods by which the strength of the poison and the opposing potency of the serum can be determined in the test tube and in experimental animals. In this manner it is possible to operate with a serum the high potency of which has been established. Of this serum, the patients of Finkelstein received (in addition to the dose of diphtheria antitoxin equivalent to 500 units per kilogram of body weight) from 25 to 50 cc. on the day of admission. Of eighteen patients who were treated from January until June, nine were given only diphtheria antitoxin, while the remaining nine patients received diphtheria antitoxin and streptococcus serum. Of the first group only one recovered; of the second group seven recovered. Among the latter, there were three patients who were extremely ill (unconscious state, high fever, and severe hemorrhages in the skin and mucous membranes). Finkelstein emphasizes that so small a series (nine cases) does not furnish an adequate basis for a conclusive judgment, but that since the danger from the disease is so great he considered it his duty to publish his experiences.

Marriages

EVERETT W. GAIKEMA, Santa Barbara, Calif., to Miss Pearl Van Westenburg of Grand Rapids, Mich., August 4.

ROBERT BRESEE MONTGOMERY to Miss Harriet R. Pearson, both of La Valle, Wis., recently.

THOMAS CONRAD WILLIAMS to Miss Nettie Claire McMath, both of Americus, Ga., June 29.

ARTHUR VAN DUSEN, Astoria, Ore., to Miss Darie Burton of Bend, at Irvington, June 22.

HERMAN K. STOCKWELL, Salem, Ore., to Miss Alta G. Terpening of Seattle, May 31.

CHARLES HOWARD DANIEL, Atlanta, Ga., to Miss Beckham of Concord, June 25.

Deaths

John Wesley Bovee ✠ Washington, D. C.; Medical Department of Columbian University, Washington, 1885; chairman of the Section on Obstetrics and Diseases of Women of the American Medical Association, 1906-1907; emeritus professor of gynecology, George Washington University Medical School; member and past president of the American Gynecological Association, the Southern Surgical Association and the Medical and Surgical Society of the District of Columbia; chairman of the committee on American membership of the International Congress on Gynecology and Obstetrics; for many years gynecologist to the Columbia Hospital for Women, the George Washington University Hospital, St. Elizabeth's Hospital and the Providence Hospital; editor of "Bovee's Practice of Gynecology"; aged 65; died, September 3, of injuries received in a fall.

James McQueen Buchanan, Meridian, Miss.; University of Virginia Department of Medicine, Charlottesville, 1879; Medical Department of the University of the City of New York, 1880; treasurer and past president of the Mississippi State Medical Association; member of the American Psychiatric Association; superintendent of the East Mississippi Insane Hospital, 1890-1918; aged 71; died, August 5.

Alfred G. Kreutzer, Milwaukee; Wisconsin College of Physicians and Surgeons, Milwaukee, 1902; member of the American Academy of Ophthalmology and Oto-Laryngology; clinical professor and director of the division of otology, rhinology and laryngology, Marquette University School of Medicine; aged 50; died, June 29, of chronic nephritis and hemiplegia.

Frederick Timothy Clark ✠ Westfield, Mass.; Albany (N. Y.) Medical College, 1896; member of the American Academy of Ophthalmology and Otolaryngology; served during the World War; on the staff of the Noble Hospital; aged 53; died, August 16, at the Northampton (Mass.) State Hospital, of uremia and chronic nephritis.

Eugene Henry Howard, Rochester, N. Y.; University of Buffalo School of Medicine, 1873; member of the Medical Society of the State of New York, and the American Psychiatric Association; superintendent of the Rochester State Hospital; aged 76; died, August 23, of injuries received in an automobile accident.

George Bieser, New York; Columbia University College of Physicians and Surgeons, New York, 1891; member of the Medical Society of the State of New York; for fifteen years connected with the district medical service of the Lutheran Hospital of Manhattan; aged 57; died, August 21, of chronic myocarditis.

Percy Elmore Milbourne, St. Joseph, Mo.; Ensworth Medical College, St. Joseph, 1910; member of the Missouri State Medical Association; past president of the Thayer County (Neb.) Medical Society; on the staffs of the Missouri Methodist and Noyes hospitals; aged 53; died, May 18, of diabetes.

Henry Charles Senke, Rochester, N. Y.; University of Michigan Homeopathic Medical School, Ann Arbor, 1909; member of the Medical Society of the State of New York; served during the World War; aged 42; died, July 17, at the Clifton Springs (N. Y.) Sanitarium, of heart disease.

Sparrell Simmons Gale ✠ Roanoke, Va.; Columbia University College of Physicians and Surgeons, New York, 1901; member of the American Association for Thoracic Surgery; medical director of the Lewis-Gale Hospital, where he died, August 19, aged 51, of intestinal paralysis.

Walter Tuttle, Exeter, N. H.; Boston University School of Medicine, 1885; member of the New Hampshire Medical Society; formerly secretary of the Rockingham County Medical Society; aged 64; died, in August, at the Exeter Hospital, of chronic nephritis and diabetes mellitus.

James Capers Jones ✠ Gulfport, Miss.; Atlanta (Ga.) College of Physicians and Surgeons, 1911; president of the Harrison-Stone Counties Medical Society; on the staff of the King's Daughters' Hospital; aged 46; died, June 25, of acute appendicitis.

Arthur James Sanderson ✠ Berkeley, Calif.; Cooper Medical College, San Francisco, 1891; University of Michigan Medical School, Ann Arbor, 1895; physician in charge of the El Reposo Sanitarium and Hospital; aged 62; died, July 2, at Santa Barbara.

Bernard Purcell Muse ✠ Baltimore; College of Physicians and Surgeons, Baltimore, 1888; professor of clinical obstetrics, University of Maryland School of Medicine; on the staff of the Franklin Square Hospital; aged 59; died, August 6, of lymphosarcoma.

Thomas Henry Jamieson ✠ Wellington, Kan.; Rush Medical College, Chicago, 1891; for fourteen years secretary of the Summer County Medical Society; for fourteen years county health officer; aged 61; died, August 21, of sarcoma of the spleen.

Jacob La Tourette Hanmer, Middletown, N. Y.; Eclectic Medical College of the City of New York, 1883; for twenty-five years health officer of Middletown; formerly on the staff of the Thrall Hospital; aged 79; died, August 7, of cerebral hemorrhage.

Robert M. Rogers, Mansfield, Mo.; Marion-Sims College of Medicine, St. Louis, 1891; member of the Missouri State Medical Association; president of the Wright-Douglas County Medical Society; aged 64; died, June 2, of carcinoma of the pancreas.

Emmett Cook McKowen ✠ El Paso, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1886; aged 65; died, August 23, at the Masonic Hospital, following an operation for occlusion of the ileum.

Joel Howard Todd, Maryville, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; member of the Missouri State Medical Association; on the staff of St. Francis Hospital; aged 77; died suddenly, April 6, of cerebral hemorrhage.

John W. Dick, Philadelphia; Jefferson Medical College of Philadelphia, 1866; member of the Medical Society of the State of Pennsylvania; Civil War veteran; aged 82; died, August 29, of cerebral thrombosis and bronchopneumonia.

Richard Roderick Jones, Britton, S. D.; Rush Medical College, Chicago, 1888; for twenty years president of the school board; superintendent of the county board of health, and for six years mayor of Britton; aged 65; died, June 26.

Asa Lee Woolis, Alliance, Neb.; University Medical College of Kansas City, Mo., 1900; on the staff of St. Joseph's Hospital; aged 52; died, August 22, of meningitis, following an operation on the gallbladder a few weeks ago.

Homer C. Haas, Palo Alto, Calif.; Hahnemann Medical College and Hospital, Chicago, 1890; formerly a practitioner in Indiana and member of the board of health; aged 60; died, August 17, at the Agnes (Calif.) State Hospital.

Weber L. Gerhart, Lewisburg, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1887; member of the Medical Society of the State of Pennsylvania; aged 62; died, August 17, of heart disease.

Lyman Harvey Chapman ✠ Memphis, Tenn.; University of Tennessee College of Medicine, Memphis, 1912; served during the World War; aged 40; died, August 2, of injuries received in an automobile accident.

William Franklin Wright, New York; Medical Department of Columbia College, New York, 1879; member of the Medical Society of the State of New York; aged 74; died, August 18, of chronic myocarditis.

Alfred Loomis McAnally, Baltimore; University of Maryland School of Medicine and the College of Physicians and Surgeons, Baltimore, 1925; intern, St. Joseph's Hospital; aged 27; died, July 19.

Charles Douglas McCulloch, Wellington, Ont., Canada; University of Toronto Faculty of Medicine, 1912; for many years coroner of Wellington; aged 41; died, June 5, at Belleville, of meningitis.

Salathiel Corydon McKitrick, Tabor, Iowa; Eclectic Medical Institute, Cincinnati, 1888; formerly mayor of Tabor and member of the school board; aged 79; died in August, of acute pancreatitis.

Willis Northrup Boynton ✠ Brewster, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1891; aged 64; died suddenly, August 15, of cerebral hemorrhage.

Joseph H. Simmons, St. Louis; College of Physicians and Surgeons, Keokuk, Iowa, 1884; also a druggist; aged 67; was found dead, July 29, at Vienna, Ill., of phenol (carbolic acid) poisoning.

Joseph Allen Mollison, St. Joseph, Mo.; Kansas City Medical College, 1904; aged 70; died, August 12, at the Missouri Methodist Hospital, of cholelithiasis and carcinoma.

Moses J. Husinsky, Hartford, Conn.; Yale University School of Medicine, New Haven, 1892; on the staff of the Mount Sinai Hospital; aged 61; died, in July, of angina pectoris.

Lewis Jerome Worthen, San Diego, Calif.; Chicago Homeopathic Medical College, 1888; Civil War veteran; aged 78; died, August 17, at the Mercy Hospital, following an operation.

William Ernest Harding, Brockville, Ont., Canada; Trinity Medical College, Toronto, 1888; Queen's University of Medicine, Kingston, 1888; coroner of Brockville; died, May 13.

William F. Ely, Lansford, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1903; aged 58; died, August 7, at the Coaldale (Pa.) Hospital, of acute nephritis.

Joseph Henry Hoffman ✠ Pittsburgh; Jefferson Medical College of Philadelphia, 1883; aged 68; died, August 16, at the Mercy Hospital, of bronchopneumonia.

Ernest N. Perrigard, Montreal, Que., Canada; McGill University Faculty of Medicine, Montreal, 1908; aged 40; died recently, at the Royal Victoria Hospital.

Albert Eli Meadow, Birmingham, Ala.; Pulte Medical College, Cincinnati, 1883; Chicago Homeopathic Medical College, 1899; aged 66; died, in August.

Hadley Thomas Cannon, Rockville Center, N. Y.; University of Buffalo School of Medicine, 1905; aged 46; died, August 21, of tabes dorsalis.

Charles Sherman Gleason, Wareham, Mass.; Boston University School of Medicine, 1892; aged 62; died, August 23, at Bath, Maine, of heart disease.

Havens Brewster Bayles, Brooklyn; Medical Department of Columbia College, New York, 1879; aged 70; died, August 22, of cerebral hemorrhage.

T. H. Jarman, Miami, Fla.; Atlanta (Ga.) College of Physicians and Surgeons, 1905; aged about 49; died, July 22, at Sparks, Ga., of heart disease.

George Joseph Behrendt, Chicago; Chicago College of Medicine and Surgery, 1908; aged 43; died, May 31, of acute dilatation of the stomach.

Henry L. Carr, Oyster Bay, N. Y.; New York Homeopathic Medical College and Hospital, 1887; aged 62; died, August 13, as the result of a fall.

Hannah G. Hutchins, Chicago; Hahnemann Medical College and Hospital, Chicago, 1883; aged 84; died, August 20, of arteriosclerosis.

Irven O. Buchtel, Auburn, Ind.; Hahnemann Medical College and Hospital, Chicago, 1890; aged 64; died, August 18, of heart disease.

Arthur L. Travis, Minneapolis; Rush Medical College, Chicago, 1887; aged 66; died, August 16, of cardiovascular renal disease.

Joseph Henry Stoll, Wooster, Ohio; Jefferson Medical College of Philadelphia, 1871; aged 78; died, August 12, of pneumonia.

Elias Jones Denson, Allentown, Ga.; Atlanta Medical College, 1881; Civil War veteran; aged 84; died, August 17, of influenza.

Alva L. Allen, Norwalk, Wis. (registered, Wisconsin, by the Act of 1901); aged 59; died suddenly, June 14, of heart disease.

CORRECTION

Dr. Elterich Was Professor of Pediatrics.—In THE JOURNAL, last week, it was stated that the late Dr. Theodore J. Elterich was assistant professor of pediatrics at the University of Pittsburgh School of Medicine. Dr. Elterich was for many years professor of pediatrics at that school. His son, Dr. Theodore O. Elterich, is assistant professor of pediatrics.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

GELOBARIN NOT ACCEPTABLE FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of this report.

W. A. PUCKNER, Secretary.

Gelobarin is the trademarked name under which the Powers-Weightman-Rosengarten Company markets a mixture of barium sulphate and water, containing approximately 40 per cent of barium sulphate. The preparation is proposed for use in radiologic examinations.

The A. M. A. Chemical Laboratory found that the product now marketed meets the requirements of the U. S. Pharmacopeia X for barium sulphate. In view of this the Council decided to accept the preparation provided it was marketed under a nonproprietary, descriptive designation, such as Barium Sulphate Paste. The Council considered the question of recognizing the proprietary, nondescriptive name "Gelobarin" but concluded that the mixture did not present sufficient originality to permit such recognition under its rules ("Proprietary ['Trade'] Names; When Permitted," New and Nonofficial Remedies, 1927, p. 17).

When the Powers-Weightman-Rosengarten Company was informed of the conditions under which the Council could accept its barium sulphate mixture, the firm replied that it used "Barium Sulphate Cream" as a synonym on the label, but that it proposed to market it as "Gelobarin." It is the experience of the Council that products are known not by their subtitles but by the names under which they are offered. Therefore the Council was obliged to declare "Gelobarin" unacceptable for New and Nonofficial Remedies because it is an unoriginal product that is offered under a proprietary, nondescriptive name.

GONOCOCCUS IMMUNOGEN, GONOCOCCUS IMMUNOGEN COMBINED, STREPTOCOCCUS IMMUNOGEN, STREPTOCOCCUS IMMUNOGEN COMBINED, PERTUSSIS IMMUNOGEN COMBINED, AND PNEUMOCOCCUS IMMUNOGEN COMBINED NOT ACCEPTABLE FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report.

W. A. PUCKNER, Secretary.

Immunogen is the name applied by Parke, Davis & Co. to bacterial antigen products free or nearly free from bacterial cells and toxin, prepared by agitating live bacilli with physiological solution of sodium chloride and separating the liquid from the organism. The firm requested the Council to consider a number (twelve) of these products in 1924. The Council examined the evidence for the value of "immunogens" and decided to consider eligible for acceptance those simple immunogens in the case of which similar bacterial vaccines stood accepted for New and Nonofficial Remedies. Regarding the "mixed" immunogens which had been presented, the firm was informed that the Council considered adequate evidence for the value of these preparations to be lacking, but that any new evidence for their therapeutic value would be considered. In response the firm presented evidence which permitted the acceptance of two of the simple immunogens.

In consideration of the inquiries received concerning the advertising claims made for immunogens, Parke, Davis & Co. was informed that the Council desired to take definite action is regard to those which had not been made acceptable. The firm was requested to send the advertising for the, as yet unaccepted, immunogens which were being marketed together

with any further information which would aid in determining their acceptability for inclusion in New and Nonofficial Remedies. In reply the firm sent specimens and advertising for the following: Gonococcus Immunogen, Streptococcus Immunogen, Gonococcus Immunogen Combined, Streptococcus Immunogen Combined, Pertussis Immunogen Combined, and Pneumococcus Immunogen Combined. No new evidence for the value of the products was submitted. The gonococcus and streptococcus immunogens were denied admission to New and Nonofficial Remedies because no simple vaccines representing these organisms stand accepted. After considering the evidence for the four combined or "mixed" immunogens, the Council declared them unacceptable for lack of adequate evidence of their therapeutic value.

Correspondence

ASTHMA AND ALLERGY

To the Editor:—I notice an interesting editorial on asthma and allergy in THE JOURNAL, August 6, page 452.

In my paper in the *Archives of Internal Medicine* (May, 1927, page 625), I presented conclusions which are, I believe, a step in advance of the conception of the etiologic basis for bronchial asthma. I may say that in a paper on anaphylaxis and roentgen rays (*Klin. Wchnschr.* 6:1027, 1927), Schneider has shown that roentgen rays prevented the death of mammals from anaphylactic shock. This would indicate a chromosomal constitution as the basis for the bronchial asthma.

MORRIS H. KAHN, M.D., New York.

AN INVESTIGATOR ON RESEARCH

To the Editor:—In *Science*, August 5, p. 117, Dr. R. E. Rose, head of the research department of the great DuPont Company, has a searching and provocative paper on research. It is not altogether orthodox. Indeed, his attitude must affect the orthodox believers in research "from cover to cover" a good deal as higher criticism does the fundamentalists. For Rose submits to careful scrutiny our tendencies in academic research; criticizes a great deal of it; thinks that it is unduly expensive, carelessly directed, unproductive as research and of doubtful value; and acts in general a good deal like an unbeliever in the Temple. It is a good deal like one of the talks of Dean Inge to the high churchmen. It is not that he is not a firm believer in the value of research, or that he does not recognize the value of knowledge for knowledge's sake and that research is not to be criticized simply because it has no apparent practical application. As he says: "Because of its illusiveness, because of the enormous prizes it has brought to mankind, because of its value as a mental training, there is a tendency to be slipshod in criticizing research. . . . Nowadays the quantity of academic work is greater than ever before, and I think that we are not critical enough of it." He gives figures to indicate the great expensiveness of academic research in time and money, and adds, "Any industrial firm spending such an enormous sum would be highly critical of the results obtained." He includes as a credit, to be deducted from the cost of research as such, the value of the training that the students get in the work, although, he says, he thinks it is less important than it is sometimes thought. But he does suggest that such enormous expenditures deserve most careful scrutiny and should be used with the utmost intelligence. He thinks that it is not intelligent that men, simply because they have the inclination and training for research, should be encouraged in it. Research men with capacity are rare and have to be picked with great care. But his most searching criticism and his most striking recommendation are that institutions should be scrutinized and classified in the same way. "My first change would be in limiting the number of academic institutions in which research is done for advanced degrees."

From my experience of industry and of academic research, I do not believe it possible for a man to function at the same time both as an executive of a large establishment, as a teacher and as a director of research. Therefore, I should like to reiterate what has been said so often, both by myself and others, that we should not reward research by executive responsibility and that we should relieve the true research man from the round of ordinary teaching and let him build up a research school fed by students from the countrywide, sent by his colleagues and the well informed opinion of the student body.

He would, in short, have research done by the men who and by the institutions which have shown their ability to do it. It is not a ritual whose performance is good in itself.

Altogether the paper is a salutary challenge to our present academic policy in regard to research, certainly as far as it pertains to medicine. Research is the fetish which is now controlling us. Study some problem—it doesn't make much difference what it is—and make a report; write papers; make a showing in the bibliography of the institution; teaching is secondary; to hold a professorship in a practical department of medicine and surgery, one must primarily be an investigator; whether he has practical experience in the practice of his branch is a secondary consideration. These attitudes are largely dominant in medical education and, without having any specific reference to medicine, Rose's paper directly challenges them. He questions the value of research in teaching, and holds that actual research men are so valuable that he would relieve them from the responsibilities of executives and teachers and would allow them untrammeled freedom to devote their abilities to their especial fields. On the other hand, he would not have independent research undertaken or research directed by untried men. He intimates that in industry, where research has won its spurs and proved its usefulness, our present policy in academic research would not be tolerated and he offers many constructive suggestions, some of which we have indicated, as to how academic research might profit by adopting some of the responsibilities demanded in industry. If such a policy were adopted in medical education we should doubtless have less and probably better research, and more time for, and better, education. It would make research the primary and engrossing business of a few institutions; it would leave most schools free from the burden of living up to the fashion of being primarily devoted to research; it would perform a similar function for most teachers. It would thus be an enormous saver of time and money and it would leave the great number of our institutions and teachers with time and opportunity to devote their attention primarily to their real work—teaching.

Of course the answer that will be made, which Dr. Rose already touches on in expressing his skepticism about the value of research in teaching, is that research is the best method of teaching. Even granting that that is so, it does not change the situation. Travel is, also, doubtless the best way to learn geography. Students can no more acquire their fund of knowledge of medicine and its underlying sciences by research than can a student in general education get all of his geography by travel. Even the geographer must get his knowledge of geography largely from the published records; and the student has a poor education in geography or medicine who has not been taught to acquire knowledge satisfactorily from books and other indirect sources.

WILLIAM ALLEN PUSEY, M.D., Chicago.

Pityriasis Simplex.—There is hardly any field in dermatology so ill defined and so variously interpreted as the eruptions which we group together under the term pityriasis simplex, or as, following Unna, this clinical picture is generally called, eczema seborrhoicum.—Haxthausen, H.: *Lancet*, Aug. 20, 1927.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CONTAMINATION OF WATER BY COPPER

To the Editor:—The Board of Public Instruction of Monroe County has just completed a kindergarten school building, a part of the roof of which is copper. Rain water from this roof is stored in a cement cistern and used for drinking purposes. Since copper oxidizes readily in this section, some people have said that this water might become poisoned to such an extent as to render it unfit for drinking purposes. Please give us your opinion as to whether or not rain water passing over a copper roof will be poisoned to such an extent as to render it unfit for drinking.

MELVIN E. RUSSELL, Key West, Fla.

ANSWER.—Rosenau (Preventive Medicine and Hygiene, ed. 5, 1927, p. 1052) states that there have been no recorded instances of sickness due to the use of copper pipes for conveying drinking water. This, however, represents a somewhat different condition than that mentioned by our correspondent. Copper sulphate (blue vitriol) has been effectively used as a fungicide for the destruction of growths in water reservoirs, with no bad effects on the consumer. It must be admitted, however, that while the toxicity of copper salts to animals is low, the exact amount of copper that may be consumed with impunity is not known. The amount of copper allowed in foods is so small that its use as a means of imparting a green color to certain vegetables is practically prohibited. The Advisory Committee on Official Water Standards of the United States Public Health Service has recommended that the amount of copper in acceptable water supplies shall not exceed 0.2 part of copper per million of water.

Tests should be made on the cistern water referred to under varying weather conditions. The standard of 0.2 part per million can be taken as a limit, erring, if at all, on the side of safety.

TURKISH BATHS AND RUSSIAN BATHS

To the Editor:—Will you kindly give the latest judgment of medical profession on the value of the "steam room" or so-called "Turkish bath" in physical therapy? We seem to have considerable demand for this feature as an adjunct to our program of physical education for business men. What risk of respiratory infection does a man encounter when two or three normally well men use the steam room either simultaneously or at close intervals? In our plant this feature would be used in connection with a massage department for reducing purposes and to promote perspiration among older heavier men who, because of their age or weight, endanger life and limb in active exercise on the gymnasium floor.

F. ELMER CRUMLY, Honolulu, T. H.
Director, Physical Education.

ANSWER.—The Turkish bath is an old procedure and reached the acme of perfection and application during the reign of the Roman emperors. The ruins of these one-time magnificent baths are to be seen today in Rome and Naples.

The modern Turkish bath consists of dressing rooms, a warm room at a temperature of from 110 to 130 F., a hot room at a temperature of from 150 to 170 F., a shampoo room, douche, plunge bath, and a cooling room. The rooms are heated either by direct radiation by means of steam coils in the room or by indirect radiation by means of currents of hot air forced in, the latter being the most desirable on account of furnishing adequate ventilation, a feature frequently overlooked.

One should take several glasses of water just before entering the bath, and three or four more at intervals after entering, in order to encourage perspiration, which may be further increased by frequent rubbing by a trained attendant. After remaining in the hot room for a sufficient length of time, the bather enters the shampoo room, where he is manipulated in such a manner as to loosen up the dead cuticle. He is then thoroughly shampooed and a douche or spray at a temperature of from 102 to 105 F. gradually reduced to 60 or 80 F. is applied, after which he enters the plunge.

There are many chronic disorders in which the Turkish bath may be used with good results; there are also some in which it may prove disastrous; hence the necessity of a careful examination of the patient before it is prescribed. It should not be employed in cases in which there are skin eruptions. It should also be avoided in cases of organic heart disease, chronic interstitial nephritis and many pulmonary disorders, particularly acute bronchitis and tuberculosis; also in advanced arteriosclerosis, diabetes mellitus, and cases of pronounced asthenia.

Heat, when long continued, is a sedative and is debilitating; but, when intelligently prescribed and followed by proper cooling procedures, it acts as a tonic imparting to the bather a feeling of buoyancy and well being.

The Russian bath is also used to induce perspiration and is administered by placing the patient on a slab in a small room into which live steam enters either through a nozzle or perforated pipes. During the bath he is rubbed by an attendant in such a manner as to encourage perspiration and to loosen up the dead cuticle. The room temperature is usually kept between 120 and 130 F., sometimes as high as 140, and the duration of the bath is usually from fifteen to thirty minutes. The value of the bath may be enhanced by a cool shower or douche at intervals. It is concluded in the same manner as the Turkish, by a shampoo and cold shower or plunge.

The physiologic effects of the Russian bath are similar to those of the Turkish or other hot air baths except that the Russian bath does not induce perspiration so readily, carbon dioxide elimination is lessened, the moistened air greatly interferes with heat radiation from the body, and as a result body temperature rapidly rises, resulting in increased protein oxidation, which is desirable in the treatment of a number of chronic disorders.

The therapeutic indications for the Russian bath are similar to those of the Turkish bath except that the Russian bath can be used in many cases in which there are skin eruptions, when the Turkish bath is contraindicated. In cases of acute bronchitis the Russian bath often affords prompt relief; it is contraindicated in febrile disorders, myocardial weakness, pulmonary tuberculosis, arteriosclerosis and pronounced asthenia from any cause. If care is exercised to see that the rooms are well ventilated and kept in a sanitary condition, the danger from infection is very small; however, a patient suffering from a communicable disease should not be treated in the same room with other patients.

MITRAL REGURGITATION

To the Editor:—Kindly give the latest accepted pathologic physiology of mitral regurgitation; i. e., the effect of this lesion on the various chambers of the heart and the order in which the changes take place. Kindly omit my name.

M.D., Brooklyn.

ANSWER.—There can be no direct answer to this question. Mitral regurgitation is not a clinical or an anatomic entity. The effect on the other chambers of the heart will depend on just what is the etiologic agent that caused the anatomic changes resulting in the regurgitation, what those anatomic changes are, and what harm has been done elsewhere in the heart and aorta. The effect on other chambers may be slight or none, or may be varied. Mitral regurgitation is frequent in rheumatic heart disease, and Dr. Carey Coombs' book entitled "Rheumatic Heart Disease" forms an excellent basis for study. Some slight exception might be taken to the views on the pathology, and what is said of the bacteriology is by no means established but is of great value. For the bacterial endocarditis, Dr. Thayer's monograph in the Johns Hopkins reports is especially valuable. Syphilis, thyroid disease, and many degenerative processes of which we know little can all cause regurgitated murmurs. There can be no definite rule laid down which would answer the question.

IRRITABILITY AND DENTITION

To the Editor:—A baby, aged 10 months, with delayed dentition, cut a lower left middle incisor. The following day the left hand and forearm began to twitch. The next day a similar condition developed on the right side. The gums were badly swollen and, after incising, several other teeth erupted. These twitchings have developed into clonic contractions involving both hands and forearms, all the facial muscles of expression, and the tongue. This has been in progress for three weeks and is constant during waking hours but subsides during sleep. Can this be reflex irritability due to dentition? The spinal fluid is not under pressure as shown by lumbar puncture.

MELVIN A. SAYLOR, M.D., North Wales, Pa.

ANSWER.—One can safely assume that this condition is not due to dentition. While the erupting of the incisor teeth, especially of the upper teeth, may cause some discomfort and perhaps even a little fever, it practically never causes other constitutional symptoms, and certainly not such protracted symptoms as are clearly due to some involvement of the central nervous system. It is rather idle to speculate as to

the probable cause of such clonic contractures in an infant without further data as to the history and present physical condition of the child. One would have to think of encephalitis, past or present; of a hemorrhage, recent or occurring at the time of birth; of a tumor; of some toxic irritation of the central nervous system; or, lastly, and quite improbably, of spasmophilia. Under any circumstances, the condition would impress one as serious.

UPWARD ROLLING OF EYES IN ENCEPHALITIS

To the Editor:—A woman, aged 21, had "sleeping sickness" of twelve weeks' duration six years ago. There were no concomitant complications, no diplopia, no relatively immediate residual but during the attack the menses stopped completely, although regular and normal before and since. The patient has been slightly more irritable since than prior to the illness. For the past three years she has had "rolling of eyes." Suddenly (with a little excitement) the eyes roll upward and stay there fixed for from half an hour to five hours. This occurred at first daily but happens now twice a week. They can be brought down temporarily by most intensive effort. The patient feels slightly upset because of this difficulty during an episode, but otherwise can carry on an intelligent conversation during the attack. For several weeks she has been sleeping frequently during the day as well as at night. Physical examination is negative. The eyes react well to light and in accommodation, and to all extra-ocular movements. The eye-grounds do not show anything unusual. A roentgenogram of the skull and sella does not show any pathologic changes. The present treatment includes rest at the seashore, nerve sedatives, bromides, a vegetable and dairy diet, and a tonic. Please omit my name.

M.D., Brooklyn.

ANSWER.—Upward rolling of the eyes as a feature of chronic epidemic encephalitis has received much attention in recent years and several papers have been devoted to it. Among them is one by L. B. Hohman in THE JOURNAL (May 16, 1925, p. 1489), with report of four cases. A. Wimmer reports five cases in an article in English in *Acta psychiatrica et neurologica* (**1**:173, 1926), and M. Fischer two in the *Archiv für Psychiatrie* (**77**, 1926). In many cases this symptom has been controlled by scopolamine in fairly large doses.

METHENAMINE AGAIN

To the Editor:—Will you kindly notify me what house puts out Methenamine, a urinary antiseptic? Neither our wholesale houses nor retail drug stores seem familiar with this drug.

M. S. P., M.D., Shreveport, La.

ANSWER.—Methenamine is the name adopted by the U. S. Pharmacopeia, Tenth Edition (which became official a year and a half ago), for Hexamethylenetetramine, described in the previous Pharmacopeia as Hexamethylenamine. It is indeed to be deprecated that there are wholesale or retail drug stores which either do not have the official Pharmacopeia, or do not make reference to it. Several other of our correspondents have reported the same experience.

CARBON TETRACHLORIDE IN HOOKWORM INFESTATION

To the Editor:—I am told that there is a preparation that can be given with carbon tetrachloride which prevents its absorption or decreases its toxicity when given in the treatment of hookworm infestation. Have you any available data? Please omit name.

M.D., Louisiana.

ANSWER.—Giving carbon tetrachloride with saturated solution of magnesium sulphate (say 50 cc.) probably increases the safety of the treatment by lessening the absorption. On the other hand, fats and alcohol should be excluded, as they increase absorption and toxicity.

ALTERNATIVE METHODS OF ADMINISTERING ARSENICALS

To the Editor:—Please inform me whether it is possible to administer any of the arsenicals in the form of an enema in the treatment of syphilis. Is there any other method to be followed when it is impossible to administer the arsenicals intravenously?

M.D., Washington, D. C.

ANSWER.—In the doses ordinarily given in suppositories on the market, the action is too feeble to be therapeutically justifiable. The high colonic administration of five times the intravenous dose (4 Gm.) of neoarsphenamine has yielded higher arsenic concentration than was obtained by intravenous injection (Mehrtens). This method is, however, still in the experimental stage.

Sulpharsphenamine is probably the best arsenical known for intramuscular injection. It is claimed to give results almost equal to arsphenamine intravenously. It may be administered in doses of from 0.4 to 0.6 Gm. once every five days for a series of eight injections to each course.

QUININE PRESCRIPTION

To the Editor:—I notice that many of the older practitioners in this vicinity are in the habit of prescribing some inorganic acid along with quinine, in the treatment of malaria. The two are prescribed separately but patients are instructed to take a dose of the acid (usually 10 to 15 drops of aromatic sulphuric, or dilute hydrochloric, acid) twenty or thirty minutes following the quinine. Will you please advise me if this is a rational form of treatment, and if the addition of the acid to the medication adds any real benefit to the patient? Please omit name.

M.D., Texas.

ANSWER.—Acid makes quinine sulphate much more soluble and absorbable, and prescribing the two separately enables one to administer the quinine sulphate in capsules or suspension and still get the effect of the more soluble acid salt. Of course, quinine bisulphate or hydrochloride, which are quite soluble, may be given in capsules, rendering the subsequent administration of acid unnecessary.

DIGITALIS — CALCIUM CHLORIDE

To the Editor:—1. Kindly give me your opinion regarding the efficacy of "tonic" doses of digitalis when the patient has not been digitalized. 2. In the treatment of nephritis with edema occurring in a patient with far advanced pulmonary tuberculosis, are there any contraindications to the use of calcium chloride (10 Gm. daily) or to fairly large doses of ammonium chloride?

WALTER K. GRIGG, M.D., Albany, N. Y.

ANSWER.—1. They would be of value only after accumulation has occurred, which would be a matter of days.

2. None excepting the liability of upsetting the digestive tract, which, with the importance that improvement of nutrition plays in the cure of tuberculosis, might be a serious matter.

TESTS FOR ALCOHOL

To the Editor:—Will you kindly publish in detail a simple test, or tests, to determine if alcohol is pure and can be used internally? Please omit name.

M.D., Brooklyn.

ANSWER.—The U. S. Pharmacopeia, Tenth Edition, contains the description and physical properties of tests for identity and purity of Alcohol, U. S. P. There is no single, simple test which is considered reliable.

TREATMENT OF INFESTATION WITH TAENIA SAGINATA

To the Editor:—What is the best treatment to remove *Taenia saginata*? A woman, aged 35, has been suffering for some years with this. I have tried various drugs, especially large doses of male fern, along with starvation, liquid feeding and purging after administering the drug. I succeed only in removing sometimes large pieces, sometimes little. Please omit name.

M.D., Canada.

ANSWER.—The secret of success in the treatment of tapeworm infestation is (1) proper preparation of the patient, and (2) a sufficient dose of the anthelmintic. From twenty-four to forty-eight hours before the treatment the patient is put on a clear liquid diet: black coffee, tea, beef tea and water, with thorough saline evacuation of the bowel. One or more teaspoonfuls of magnesium sulphate three times a day may be considered a fairly radical means of securing a minimal dilution of the anthelmintic. It may require keeping the patient in bed on account of weakness. Early in the morning on the day of the treatment, the patient is given from 15 to 30 Gm. of magnesium sulphate. After the bowels have moved, it is desirable to clear out the lower bowel by means of a large enema, so as to improve one's chances of finding the head of the tapeworm.

After this, oleoresin of aspidium is given in 1 cc. capsules, one every fifteen minutes until six have been taken; or else the following emulsion recommended by Magath and Brown (THE JOURNAL, May 14, 1927, p. 1549) may be administered: "oleoresin of aspidium, 6 cc.; powdered acacia, 8 Gm., distilled water sufficient to make 60 cc." This emulsion is administered in two doses of 30 cc. each, one hour apart. Two hours after the second dose, 30 Gm. of magnesium sulphate is administered; two hours after this a large soap-suds enema is given. If the 6 Gm. dose fails, the dose of the oleoresin might be increased to 8 Gm. but not beyond. If the patient vomits the dose, it might be administered by stomach tube or,

better still, by duodenal tube; for intraduodenal administration is credited with securing the greatest efficiency from a certain dose. Castor oil must not follow oleoresin of aspidium.

If male fern fails completely, pelletierine tannate is worthy of a trial, given in doses of 0.5 Gm. followed in two hours by 30 cc. of castor oil.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ARKANSAS: Little Rock, Nov. 8. Sec, Eclec. Bd., Dr. C. E. Laws, Ft. Smith.

ARKANSAS: Little Rock, Nov. 8-9. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville; Sec., Eclec. Bd., Dr. C. E. Laws, Ft. Smith.

CALIFORNIA: San Francisco, Oct. 17-20. Sec., Dr. Chas. B. Pinkham, 906 Forum Bldg., Sacramento.

COLORADO: Denver, Oct. 4. Sec., Dr. Philip Work, 1011 Republic Bldg., Denver.

CONNECTICUT: State Board of Healing Arts, New Haven, Oct. 8. Prerequisite to examination. Chairman, Dr. Charles M. Bakewell, Box 1895, Yale Station, New Haven.

DISTRICT OF COLUMBIA: Washington, Oct. 11. Sec., Dr. Edgar P. Copeland, 1801 Eye St., Washington, D. C.

FLORIDA: Winter Haven, Nov. 14-15. Sec., Dr. W. M. Rowlett, 812 Citizens Bank Bldg., Tampa.

GEORGIA: Atlanta, Oct. 11. Sec., Dr. J. W. Palmer, Ailey.

IDAHO: Boise, Oct. 11. Commissioner of Law Enforcement, Hon. Fred E. Lukens, Boise.

ILLINOIS: Chicago, Oct. 4-6. Supt. of Regis., Mr. V. C. Michels, Springfield.

IOWA: Des Moines, Oct. 4-6. Dir. of Examinations and Licenses, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

KANSAS: Topeka, Oct. 11. Sec., Dr. A. S. Ross, Sabetha.

MAINE: Portland, Nov. 8-9. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MASSACHUSETTS: Boston, Nov. 8-10. Sec., Dr. Frank M. Vaughan, 144 State St., Boston.

MICHIGAN: Lansing, Oct. 11-13. Sec., Dr. Guy L. Connor, 707 Stroh Bldg., Detroit.

MINNESOTA: Minneapolis, Oct. 18-19. Sec., Dr. A. E. Comstock, 636 Lowry Bldg., St. Paul.

MISSOURI: Kansas City, Oct. 25-27. Sec., Dr. James Stewart, Jefferson City.

MONTANA: Helena, Oct. 4-6. Sec., Dr. S. A. Cooney, Power Blk., Helena.

NEVADA: Carson City, Nov. 7. Sec., Dr. Edward E. Hamer, Carson City.

NEW JERSEY: Trenton, Oct. 18-19. Sec., Dr. Chas. B. Kelley, 1101 Trenton Trust Bldg., Trenton.

NEW MEXICO: Santa Fe, Oct. 10-11. Sec., Dr. W. T. Joyner, Roswell.

NEW YORK: Albany, Buffalo, New York and Syracuse, Sept. 19-22. Chief Professional Examination Bureau, Mr. Herbert J. Hamilton, Albany.

SOUTH CAROLINA: Columbia, Nov. 8. Sec., Dr. A. Earle Boozer, 505 Saluda Ave, Columbia.

WYOMING: Cheyenne, Oct. 3-5. Sec., Dr. G. M. Anderson, Cheyenne.

Oregon July Examination

Dr. M. K. Hall, secretary of the Oregon Board of Medical Examiners, reports the written examination held at Portland, July 5-7, 1927. The examination covered 11 subjects and included 110 questions. An average of 75 per cent. was required to pass. Of the 41 candidates examined, 35 passed and 6, including 2 osteopaths, failed. Thirteen candidates, including one osteopath, were licensed by reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent
Washington University School of Medicine		(1927)	80.5
Cornell University Medical College		(1927)	85.5
University of Oregon Medical School	82.2, 82.6, 85.1, 86.2, (1927) 78.6, 79.3, 79.4, 79.4, 80.5, 80.7, 81.1, 81.2, 81.4, 81.4, 82, 82.2, 82.5, 82.6, 83, 83.3, 83.5, 83.6, 83.9, 84.1, 84.4, 84.4, 84.9, 85.8, 87.7, 88.5, 91.6	(1926)	81.4,
McGill University Faculty of Medicine		(1924)	84

College	FAILED	Year Grad.	Per Cent
University of Oregon Medical School	(1924) 74.1,	(1927)	77.3, 77.8
Baylor University School of Medicine		(1915)	65.2
Osteopaths			68.8, 71

College	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Stanford University School of Medicine		(1924)	California
Rush Medical College		(1901)	Illinois
Univ. of Illinois Coll. of Med.	(1913) S. Dakota,	(1922)	Illinois
University of Maryland School of Medicine		(1906)	S. Carolina
University of Michigan Medical School		(1913)	Michigan
University of Minnesota Medical School		(1907)	Washington
Central Medical College of St. Joseph, Mo.		(1899)	Kansas
University of Nebraska Coll. of Med.	(1921) Idaho,	(1926)	Nebraska
Tennessee Medical College	(1907) Tennessee,	(1909)	Washington
Osteopath			Illinois

Book Notices

THE SURGICAL TREATMENT OF GOITER. By Willard Bartlett, A.B., A.M., M.D. With Foreword by Dr. Charles H. Mayo. Cloth. Price, $8.50. Pp. 365, with 130 illustrations. St. Louis: C. V. Mosby Company, 1926.

This is presented by the author as a study in detail of the procedures used at the clinic with which he is connected in the preparation, operation and after-care of goiter patients. It is written for the use of the younger, well trained general surgeons who are directing their attention to this field of surgery. The material is systematically organized and presented in an interesting manner, and the text is well illustrated, so that the author makes his meaning extremely clear. After a brief historical sketch there is a chapter on pathology contributed by Louis B. Wilson of the Mayo Clinic. This is followed by a chapter on the heart in goiter, written by Samuel B. Grant of St. Louis. After a short but valuable chapter on the unusual manifestations of goiter there are two chapters dealing with indications for the surgical treatment of goiter. Preoperative preparation of the patient is then discussed. This chapter is unusually valuable and is detailed enough to be of great practical assistance to those who are not well versed in this special branch of surgery. However, one cannot agree entirely with the author's teaching that preparation of the patient must be continued and absolutely no operative procedures undertaken in the presence of mental derangement, loss of weight, extreme restlessness, cardiac decompensation, high metabolic rate, vomiting and diarrhea. While it is true that all these conditions render the operation more hazardous and should, so far as possible, be corrected by suitable treatment before operation is resorted to, every surgeon of large experience in this special line has and undoubtedly will come across patients in whom one or more of these conditions persists in spite of proper treatment and in whom some operative intervention is alone able to rescue the patient. If operations were limited in the manner suggested by the author, the mortality certainly would be very low but we would be withholding from many patients an opportunity of regaining their health. There can be no arbitrary rules as to operability and nonoperability. Most of the surgeons of this country who are doing a large amount of thyroid surgery reject extremely few cases, and with the exception of those of cardiac decompensation, operation is done within two or three weeks after hospitalization. The author states that practically every exophthalmic patient will go over into an interval if properly treated long enough. Without discussing this matter in detail it certainly suffices that this does not hold true in the case of women who are pregnant. The greater part of the remaining chapters deal with operative procedures and surgical technic. These chapters are extremely clear and will be helpful to those for whom they are written. After an exhaustive chapter on complications, there is a special chapter on laryngeal complications, contributed by French K. Hansel of St. Louis. The remainder of the book is given over to after-treatment and the question of recurrence. Both of these contain a large amount of carefully organized and valuable information. The author is well abreast of the recent advances in the field, is familiar with and gives reference to the recent literature, and has succeeded in assembling in a practical manner the information derived from his own experience and from a study of the methods practiced in other clinics.

A TEXT-BOOK OF UROLOGY. By Oswald Swinney Lowsley, A.B., M.D., F.A.C.S., Director of the Department of Urology of the New York Hospital, and Thomas Joseph Kirwin, Ph.C., B.S., M.D., Chief of Clinic of the Department of Urology of the New York Hospital. Cloth. Price, $10. Pp. 699, with 246 illustrations. Philadelphia: Lea & Febiger, 1926.

This extremely practical work, a new monograph in its field, is based on eighteen years of intensive study which its authors have devoted to laboratory research, and a wealth of clinical experience in hospital and private practice of surgery of the genital and urinary organs, as well as exceptional opportunities of observing the methods of the masters in this country and abroad. The authors have presented a complete textbook of urology in one volume for students and prac-

titioners as well as for specialists. Its main feature is the absence of all that is obsolete and the inclusion of only those methods which have proved of value. The text is largely based on the earlier work of the authors when they were members of the urologic staff of the Bellevue Hospital, under the directorship of Dr. Edward L. Keyes, Jr., and Dr. Alfred T. Osgood. The work is divided into three parts. Part I is a historical review of urologic surgery. While this chapter is brief it is of exceptional interest and includes the delightful work of the late French urologist E. Desnos, using illustrations and material from his monograph on the history of urology. Part II deals with diagnostic procedures in urology, including a chapter on history taking and physical examination and a chapter on cystoscopy and roentgenologic diagnosis. Part III, which comprises the great bulk of the book, is devoted to diseases of the genito-urinary organs. This part is divided into ten chapters and each chapter deals with one or more organs, beginning with the lower urinary tract and ending with the kidney. In the case of each of these organs the chapter begins with a consideration of the embryology, morphology and anomalies and is followed by a brief but adequately detailed and clear presentation of the injuries and diseases, and ends with a discussion of the most approved methods of diagnosis and treatment. At the end of each chapter there is an extensive bibliography. The entire work has a sense of freshness and modernity. An example of this is the inclusion of Christeller's new technic of freezing entire organs for microscopic section. By this method one is able to eliminate the weeks of time-consuming effort heretofore required in the preparation of specimens for examination. The authors are enthusiastic in the use of regional anesthesia and find it useful for operations on every organ of the genital and urinary tracts.

LES CANCERS ET LEURS COMPLICATIONS. Étude clinique de leur évolution. Par Maurice Renaud, médecin des Hôpitaux de Paris. Paper. Price, 30 francs. Pp. 319, with 28 illustrations. Paris: Masson & Cie, 1927.

This is a timely aid for physicians in general practice. It deals with such local complications of malignant tumors as hemorrhage, ulceration and pressure which practitioners are disposed to consider. The main portion is devoted, however, to matters more commonly not thought of at all, or improperly disregarded. These are the systemic effects on metabolism, the results of infection, of tissue destruction and fever, and the influence malignant tumors have on the reaction to incidental infections, such as erysipelas. The anemia accompanying cancer is reviewed, also the particular disease elements composing the vague state known so long as cachexia. The disturbances of function of single organs or sets of organs, regardless of whether they are or are not the seat of primary or secondary tumors, are also presented concisely. For example, it is important to learn that a thrombo-ulcerative endocarditis was found in fourteen of 136 bodies examined, all bodies of patients with malignant tumors. Erroneous views are corrected and apparently unrelated facts are synthesized without effort to emphasize the unusual. Although, as stated, the treatise is designed for physicians as a whole, it possesses a special usefulness for surgeons whose interests are prone to be limited to the local disease.

A FACSIMILE OF THE FIRST EDITION OF THE PHARMACOPOEIA AUGUSTANA. With Introductory Essays by Theodor Husemann. Boards. Pp. 259. Madison: State Historical Society of Wisconsin, 1927.

The Hollister Pharmaceutical Library Fund of the State Historical Society of Wisconsin provides this facsimile of the first edition of the Augsburg Pharmacopeia, one of the earliest European pharmacopeias and the one that possibly exercised the greatest influence on later pharmacopeias. It no doubt influenced the compilers of the London Pharmacopeia, later editions of which, in turn, served as a direct guide to the early compilers of the United States Pharmacopeia. As is well known, three German cities introduced in the sixteenth century legal standards for compounded and simple medicaments. In 1535 Nuremberg introduced the pharmacopeia that had been compiled by Valerius Cordus and approved by Nuremberg physicians. About thirty years later Augsburg and Cologne followed almost simultaneously the example of Nuremberg. As the pharmacopeias of these two cities, indeed all later pharmacopeias, have been based on the "Dispensatory" of Cordus, the Nuremberg Pharmacopeia has received much more attention than the pharmacopeias of Augsburg and Cologne. Nevertheless it must be admitted that the Pharmacopeia of Augsburg, published in 1564—that of Cologne appears to have exerted a relatively local influence—exercised a much wider influence than that of Nuremberg. As to editions, it greatly exceeds the latter. These appeared not only in the seventeenth century but almost into the middle of the eighteenth century. Indeed, in 1580 the fourth edition of the Augsburg pharmacopeia was offered to the senate of Nuremberg for use in that city state as a book which had been prepared more carefully than the treatise of Cordus.

That both of Augsburg and the Cologne treatises surpassed the work of Cordus in thoroughness and care was a matter of course, for Valerius Cordus was 19 years old when, on the advice of his uncle, the apothecary Ralla of Leipzig, he compiled his "Dispensatory" and submitted it to the senate of Nuremberg. The compilers of both the Augsburg and the Cologne pharmacopeias were physicians of long experience. Unlike Valerius Cordus, who had studied in Wittenberg, they had not only studied in Germany but for the most part had acquired their doctor's degree in Italy. At the Italian universities they had had access to a number of pharmacologic treatises that presumably were not available to Cordus in Wittenberg. In addition, the author of the Augsburg Pharmacopeia had the use of the library of Adolph Occo I, a family library exceedingly rich in treasure. Thanks to this circumstance, the "Pharmacopeia Augustana" must be pronounced the most learned and thorough of the three city pharmacopeias of the sixteenth century. It is representative, in the widest sense of the term, of orthodox (hippocratic) medicine of the second half of the sixteenth century.

The author of the Augsburg Pharmacopeia of 1564 is Adolph Occo III. He was the third of four physicians of the Occo lineage, all christened Adolph. To him was devoted the distich of Nicolaus Reisner printed with the edition of the Augsburg Pharmacopeia of 1581 and that of 1597:

Now, however, the drugs of Augsburg's Pharmacopeia
Thou, by thy learning, hast found, gifting mankind for his good.
Chief in that city of Augsburg, however obscure was that city;
Now, as I fancy, through thee . . . famous over the world.

The original Augsburg Pharmacopeia included only galenic preparations in contradistinction to spagiric or mineral preparations, which were not introduced into this pharmacopeia until the edition of 1613, the revision of which we owe to Raymond Minderer, who descended from a line of Paracelsists and who with a truly eclectic spirit attempted to combine the use of ancient remedies with those that were then new and unorthodox.

A MANUAL OF PHARMACOLOGY AND ITS APPLICATIONS TO THERAPEUTICS AND TOXICOLOGY. By Torald Sollmann, M.D., Professor of Pharmacology and Materia Medica in the School of Medicine of Western Reserve University, Cleveland. Third edition. Cloth. Price, $7.50 net. Pp. 1184. Philadelphia: W. B. Saunders Company, 1926.

In the third edition of this author's standard Manual of Pharmacology the material from previous editions has been thoroughly revised, with the incorporation of certain supplemental alterations. There are excellent discussions of new topics, such as insulin, ethylene and parathyroid hormone. For many subjects, such as the autonomic system, chemotherapy and lead poisoning, new conceptions have been advanced. The author states that these additions have enriched the bibliography by some twelve hundred titles; likewise, the text has been made to conform to the United States Pharmacopeia X; the nomenclature and spelling have been changed accordingly. As in the preceding edition, the official American names, as well as the newer nonproprietary designations, are used, this being an exceedingly valuable feature to teachers of materia medica who desire their students to prescribe scientifically.

The subject matter is of a large scope; the broad conceptions, generalizations and certain detailed conclusions—all of great practical pharmacologic importance—are printed in large type; a voluminous amount of detailed data for consultation appears in smaller type, which will serve for both

study and reference. Not only is this a textbook for the student and laboratory worker; it is equally valuable for the practitioner.

As would be expected from one with such a fund of knowledge, the author is conservative and critical; for instance, in the discussion of the therapy of gland products, the physiologic actions of these preparations, so far as they are known, are thoroughly considered and the conditions in which they are of value are pointed out. In the treatment of glandular deficiency Dr. Sollmann says: "Brilliant success has been attained with thyroid in cretinism, and with insulin in diabetes; parathyroid therapy is also promising. With other glands there have been so far no definite results. It would be rash to prophesy the future from these failures; but permanent advances can only be expected from scientific experimentation. . . . Oral administration has been adequate only in case of the thyroid gland." He says that the development of glandular therapy is hindered by premature enthusiasm, which is inclined to dispense with definite criteria of action with adequate controls. Judgment is often based on desires instead of on facts.

As THE JOURNAL commented on the second edition, progressive physicians have long realized that the estimation of a drug cannot be based on uncontrolled clinical observations, or on uncritical statements handed down from one book to another. Physicians abreast of the times demand that all the scientific evidence concerning drugs—chemical, pharmacologic and clinical—must have been considered. For their purpose, there could be no better addition to the library than Sollmann's Manual of Pharmacology.

DAS HORMON DER HERZBEWEGUNG. Von Dr. med. Ludwig Haberlandt, a. o. Professor der Physiologie an der Universität Innsbruck. Paper. Price, 3.60 marks. Pp. 57, with 57 illustrations. Berlin: Urban & Schwarzenberg, 1927.

In this booklet the author gives a summary of his experimental work on the so-called heart hormone, and a discussion of the results observed and their significance. This work was carried out on the frog at about the same time and independently of that of Demoor on the dog. In the basic experiment it was shown that the ventricle of a frog's heart, beating in normal Ringer's solution, was accelerated when this solution was replaced by one in which the sinus venosus had been beating. In short, that the Ringer's solution in which the sinus venosus had been beating contained what was probably some metabolic product of the activity of the beating portion of the sinus venosus that was capable of accelerating the ventricle. It was found, further, that the same product was capable of strengthening the pulse or of initiating contractions. In the same way material from the base of the ventricle containing nodal tissue from the auriculoventricular node was allowed to pulsate in a small amount of Ringer's solution, and this in the same way used to investigate the effect on the ventricle. Again there was found evidence of some product which caused acceleration and strengthening of the beat, and which influenced stimulus production. Investigation as to the nature of the substance is given in detail and discussed as is its physiologic significance. Until more is known in regard to the phenomenon it is of little clinical interest, but it is of immediate interest to the physiologist and to those interested in the more special phases of cardiac investigation. A complete bibliography is appended.

AN ILLUSTRATED GUIDE TO THE SLIT-LAMP. By T. Harrison Butler, M.A., D.M., M.R.C.S., Honorary Ophthalmic Surgeon to the Coventry and Warwickshire Hospital. Cloth Price, $9. Pp. 144, with 158 illustrations. New York: Oxford University Press, 1927.

As new fields are developed in the realms of science, monographs and books given over to the new developments appear with appalling regularity. Some are elementary, some are comprehensive, and some are between the two. In the new field of slit lamp microscopy of the living eye, or, as Jackson has so aptly termed it, biomicroscopy, four textbooks have appeared. That by Koeppe is monumental but requires a working knowledge of higher mathematics; the Atlas by Vogt is an art gallery that should be studied by every user of the slit lamp; Koby's handbook is elementary but extremely practical; the present book by Butler borrows from all three without adding anything substantial. As a book it is a credit to the Oxford University Press, but as a manual of slit lamp microscopy it leaves much to be desired. The principles and mathematics of the instrument are touched on but briefly. The instructions for use are not adequate for a tyro, who would be apt to fall into faulty habits. The clinical descriptions vary enormously, as some are good and concise while others ramble and are laden with inconsequential details. The same holds true of the black and white illustrations. Many are excellent, in fact, some of the best that have yet appeared, while others bear more resemblance to a Goldberg cartoon than to any known ophthalmic condition. The colored plates are of high quality, and it is unfortunate that there are not more of them. Possibly if the author were somewhat more conversant with American literature he would not be willing to subscribe to a statement made in the preface that "the Zeiss slit lamp represents a combination of theory and practice which cannot in the nature of things be found in any of its rivals." Further, the rather clumsy pocket slit lamp modestly ascribed to himself is not comparable to the hand slit lamp of American design and manufacture. It is rather difficult to see just what place this book is intended to fill. True enough, the diction is excellent and those who enjoy split infinitives will revel in the reading; but it is not elementary enough for the beginner or detailed enough for the advanced student of biomicroscopy.

PRACTICAL METHODS IN THE DIAGNOSIS AND TREATMENT OF VENEREAL DISEASES FOR MEDICAL PRACTITIONERS AND STUDENTS. By David Lees, D.S.O., M.A., M.B., Surgeon in Charge of Venereal Diseases, The Royal Infirmary, Edinburgh. With an introduction by Wm. Robertson, M.D., F.R.C.P., D.P.H., Medical Officer of Health, Edinburgh. Cloth. Price, $5. Pp. 605, with 87 illustrations. New York: William Wood & Company, 1927.

This book contains a collection of the diagnostic and therapeutic methods popular in English medical circles. Its value for the American physician is impaired by the practically exclusive recommendation of drugs that are not in vogue in America. Neither the reported facts nor the way of presentation deviates in any way from the usual lines.

HANDBUCH DER PRAKTISCHEN THERAPIE ALS ERGEBNIS EXPERIMENTELLER FORSCHUNG. Herausgegeben von Reinhard von den Velden, a. o. Professor an der Universität Berlin, und Paul Wolff, Dr. Med. et Phil., Berlin. II Band, 1 Hälfte, und II Band, 2 Hälfte. Paper. Price, 76 marks. Pp. 1333, with 22 illustrations. Leipsic: Johann Ambrosius Barth, 1927.

While the first large volume of this handbook of practical therapy as the result of experimental investigation dealt to a large extent with clinical problems from the point of view of the experimentalist, the second volume, consisting of two fairly large sections, is more especially clinical and practical. The book contains a wealth of information of everyday use to the practitioner of medicine, each chapter having been written by an eminent clinical teacher or investigator. If a criticism of so excellent a work is permissible, it would be with regard to the tendency displayed by a number of the contributors to recommend the use of apparently superfluous proprietary medicinal preparations. A council on pharmacy and chemistry to serve as guide to German clinicians is evidently still a consummation devoutly to be wished for.

PRACTICE OF SURGERY: Clinical, Diagnostic, Operative, and Postoperative. Edited by Dean Lewis, M.D., Sc.D., and others. Volume II. Leather. Pp. 726, with illustrations. Hagerstown, Maryland: W. F. Prior Company, Inc., 1927.

This, the second, volume is the first to appear of a system of surgery collating the efforts of representative American surgeons under the editorial leadership of one of our great surgical scholars. The need for a work as accurate and as complete as this is urgent, for the older systems are obsolete. If the remaining volumes are up to the standard of the present one, it is easy to prophesy that this system will become the foremost work of the American school of surgery. In the past decade, advancement, particularly along the lines of physiologic research, has been carried so far as to create quite distinct and separate divisions or specialties, formerly all covered by the term general surgery. This is apparent not only in the writings of surgeons but in their work as well. Hence men limit their activities to neurologic surgery, plastic surgery or bone surgery, abdominal surgery or surgery of the

thyroid. The results of this superspecialization, the natural outcome of constant widening of the surgical horizon, are strikingly noticeable in this volume, which covers the subjects of bones and joints. There are seven chapters, dealing, respectively, with the general pathologic considerations of bone; acute and chronic osteomyelitis; the roentgenographic appearance of the epiphyses and developing joints; fractures; injuries and diseases of the joints; dislocations, and arthropathies. In the chapter on the pathology of bone, a subject much abused in actual practice and little understood in its theoretical considerations, a wealth of material not obtained in any other monograph in the language is presented. The chapter on osteomyelitis is notable. The chapter on joints and bursae is an exhaustive treatise, actually a marvelous piece of work. There is an excellent working classification of joint infections and a comprehensive treatise on joint suppuration. The various chapters present not the atmosphere of "library papers" but the expositions of masters in their respective fields.

MANUAL OF PSYCHIATRY. Edited by Aaron J. Rosanoff, M.D. Sixth edition. Cloth. Price, $6. Pp. 697, with illustrations. New York: John Wiley & Sons, Inc., 1927.

The fifth edition of this standard manual was reviewed in THE JOURNAL, Sept. 4, 1920. It was pointed out that its successive editions have been built on the nucleus of the author's translation of Rouge de Fursac's "Manual de psychiatrie," which appeared in 1905. The present edition still contains chapters on individual psychoses by de Fursac, but more of the material is by Rosanoff himself and his other collaborators, H. L. Hollingsworth, Mary C. Jarrett, C. A. Neymann and J. H. Williams. The book is divided into five parts. Part I deals with the general etiology and symptomatology of mental disease; part II with the individual mental diseases or clinical entities; part III with methods of diagnosis and treatment, and with sociological and medicolegal problems; part IV with special technical methods, such as spinal fluid examinations, tests for aphasia, and intelligence and association tests. Part V is an appendix giving the classification of mental diseases adopted by the American Psychiatric Association, and tables of height and weight, norms and intelligence questions.

PARALYSESTUDIEN BEI NEGERN UND INDIANERN. Ein Beitrag zur vergleichenden Psychiatrie. Von Dr. Felix Plaut, Professor an der Universität München. Mit einem Geleitwort von Professor Emil Kraepelin. Paper. Price, 9.60 marks. Pp. 98, with 15 illustrations. Berlin: Julius Springer, 1926.

In the spring of 1925, Dr. Plaut with Professor Kraepelin visited the United States, Mexico and Cuba for the purpose of studying the incidence of syphilis and particularly of general paralysis of the insane among the negroes and Indians. The present volume is the report of that study. A view formerly given wide credence in this country and still apparently given some credence in Europe is that the so-called metasyphilitic conditions, general paralysis and tabes dorsalis, are of rare occurrence in the negro. In the United States it is found that general paralysis of the insane occurs in about the same proportion of negroes infected with syphilis as it does in white persons infected with the same disease. Syphilis has a much greater incidence in the negro population than it does in the white population. A fact brought out by the study, but not explained, is that general paralysis in the Cuban negro is rare, though syphilis is common. Indians, both in the United States and in Mexico, are commonly infected with syphilis, but the incidence seems to be greater in the Mexican Indians. General paralysis is rarely encountered among the Indians of the United States, but it occurs about as frequently among the Mexican Indians as it does in the white population in some other countries. Adequate explanation seems to be lacking here. No relation is found to exist between smallpox vaccination and the incidence of general paralysis. Independent of any suggestion of the author, the reader of this booklet who is familiar with the state hospitals for the insane in this country will reach the conclusion that comparative studies of this sort will gain greatly in value with the increase in reliability of the records of the hospitals as sources of medical and statistical information.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

POTASSIUM AND TARTRATES. A Review of the Literature on Their Physiological Effects. By Ralph W. Webster, Ph.D., M.D., Professor of Medical Jurisprudence in University of Chicago (Rush Medical College). With a Digest and Bibliography of the Literature. By W. A. Brennan, A.B. Cloth. Price, $2.50. Pp. 168. Chicago: Commonwealth Press, 1927.

Review of literature which causes author to conclude that potassium ion and tartrates may have serious effects on the body.

LA VÉSICULE BILIAIRE. Anatomie, physiologie, sémiologie, pathologie, thérapeutique. Par M. Chiray, professeur agrégé à la Faculté de médecine de Paris, et I. Pavel, assistant universitaire à la Faculté de médecine de Bucarest. Avec un exposé de radiologie vésiculaire. Par A. Lomon. Paper. Price, 70 francs. Pp. 568, with 131 illustrations. Paris: Masson & Cie, 1927.

Extensive monograph on the gallbladder, especially well printed for a French medical book.

NOMOGENESIS OR EVOLUTION DETERMINED BY LAW. By Leo S. Berg, D.Sc., Chief of the Bureau of Applied Ichthyology in the State University of Leningrad. With an introduction by D'Arcy Wentworth Thompson. Translated from the Russian by J. N. Rostovtsow. Cloth. Price, $10. Pp. 477, with illustrations. London: Oxford University Press, 1927.

Highly technical discussion sustaining author's view that environment is important factor in evolution.

MODERNE THERAPIE IN INNERER MEDIZIN UND ALLGEMEINPRAXIS. Ein Handbuch der medikamentösen, physikalischen und diätetischen Behandlungsweisen der letzten Jahre. Von Dr. R. Franck, Facharzt für innere Krankheiten, Leipzig. 1. Teil: Arzneimittelbesprechung. 2. Teil: Therapie der inneren Krankheiten. Second edition. Cloth. Price, 15 marks. Pp. 626. Leipsic: F. C. W. Vogel, 1927.

Systematic alphabetical index to therapy.

MANUAL OF THE DISEASES OF THE EYE. For Students and General Practitioners. By Charles H. May, M.D., Director and Visiting Surgeon, Eye Service, Bellevue Hospital, New York. Twelfth edition. Cloth. Price, $4. Pp. 445, with 374 illustrations. New York: William Wood & Company, 1927.

New edition representing continuous revision of this most popular manual of ophthalmology.

HANDBUCH DER INNEREN SEKRETION. Eine umfassende Darstellung der Anatomie, Physiologie und Pathologie der endokrinen Drüsen. Herausgegeben von Dr. Max Hirsch. I. Band, Lieferung 3 und III. Band, Lieferung 2. Paper. Price, 15 marks and 32 marks. Pp. 337-472, and 203-589, with illustrations. Leipsic: Curt Kabitzsch, 1927.

Additional parts of an extensive German system of knowledge of the internal secretions.

CANCER OF THE UTERUS. A Statistical Inquiry into the Results of Treatment, Being an Analysis of the Existing Literature. By Janet E. Lane-Claypon, M.D., D.Sc. Reports on Public Health and Medical Subjects No. 40. Paper. Price, 3s. 6d. net. Pp. 173. London: His Majesty's Stationery Office, 1927.

Monograph reviewing knowledge of cancer of uterus with sound conclusions.

SOME ADMINISTRATIVE ASPECTS OF SCARLET FEVER. Being a Report on Current English Public Health Practice in the Control and Treatment of Scarlet Fever. By Allan C. Parsons, M.R.C.S. Reports on Public Health and Medical Subjects. No. 35. Paper. Price, 6s. net. Pp. 369. London: His Majesty's Stationery Office, 1927.

Official Report demonstrating advantages of institutional care.

THE PRINCIPLES OF PHYSICAL EDUCATION. By Jesse Feiring Williams, A.B., M.D., Professor of Physical Education, Teachers College, Columbia University. Cloth. Price, $3 net. Pp. 481, with illustrations. Philadelphia: W. B. Saunders Company, 1927.

Guide to proper education of bodily attainments and a companion volume to the author's excellent "Personal Hygiene."

DIE THERAPIE AN DEN BERLINER UNIVERSITÄTS-KLINIKEN. Herausgegeben von Dr. Wilhelm Croner. Ninth edition. Cloth. Price, 14 marks. Pp. 632. Berlin: Urban & Schwarzenberg, 1927.

Alphabetical index to therapy of Berlin University Hospital.

LES VERTIGES LABYRINTHIQUES. Par André Moulonguet, oto-rhino-laryngologiste des Hôpitaux de Paris. Paper. Price, 18 francs. Pp. 165. Paris: Masson & Cie, 1927.

Studies of vertigo from the point of view of otolaryngology.

THE SUICIDE PROBLEM IN THE UNITED STATES. By Adolph Dominic Frenay, O.P., Ph.D. Cloth. Pp. 200. Boston: Richard G. Badger, 1927.

Excellent compilation of statistics on suicide with conclusions favoring religious training as a preventive.

RÖNTGENKUNDE. Von Priv.-Doz. Dr. Gerhard Hammer. Paper. Price, 6 marks. Pp. 213, with 20 illustrations. Leipsic: Johann Ambrosius Barth, 1927.

Poorly printed pocket handbook of roentgenology.

THE INJECTION TERATMENT OF VARICOSE VEINS. By A. H. Douthwaite, M.D., M.R.C.P. Paper. Price, 3s. net. Pp. 39. London: H. K. Lewis & Company, Ltd., 1927.

Brief monograph describing varied technics.

BAD-NAUHEIM. The Cure and the Diseases to Which It Is Applicable. Compiled by the Association of Bad-Nauheim Doctors. Paper. Pp. 54, with illustrations. New York: German Health Resorts, 1927.

Advertising matter for German springs.

THE CROOKSHAVEN MURDER. By Alexander Morrison. Cloth. Price, $2. Pp. 292. Boston: Houghton Mifflin Company, 1927.

A good detective story but neither literary nor scientific.

DENKEN UND TRÄUMEN. Von Dr. Luisa Kerschbaumer. Paper. Pp. 133. Chippewa Falls, 1926.

Poems of a German-American woman physician.

EXPERIMENTAL BACTERIAL AND CHEMICAL POLLUTION OF WELLS VIA GROUND WATER AND THE FACTORS INVOLVED. Report on the Geology and Ground Water Hydrology of the Experimental Area of the United States Public Health Service at Fort Caswell, N. C. Hygienic Laboratory Bulletin No. 147. Paper. Pp. 168, with illustrations. Washington: Government Printing Office, 1927.

LASSAR-COHN PRAXIS DER HARNANALYSE FÜR MEDIZINER, APOTHEKER UND CHEMIKER. Anleitung zur chemischen Untersuchung des Harns und der Harnkonkremente nebst einem Anhang: Analyse des Mageninhalts und die mikrochemische Untersuchung wichtiger Blutbestandteile. Von Dr. Rudolf Rapp. Seventh edition. Paper. Price, 2.20 marks. Pp. 66. Leipsic: Leopold Voss, 1927.

WEITERE FORTSCHRITTE DER STERILITÄTSBEHANDLUNG. Von Hugo Sellheim, o. Professor und Direktor der Universitäts-Frauenklinik in Leipzig. Heft 1.—Abhandlungen aus der Geburtshülfe und Gynäkologie und ihren Grenzgebieten. Herausgegeben von A. Martin und anderen. Paper. Pp. 36, with 21 illustrations. Berlin: S. Karger, 1927.

DIE SERODIAGNOSE DER TUBERKULOSE. Von Dr. Max Pinner, Direktor des Laboratoriums der städtischen Tuberkulose-Heilstätte Detroit. Tuberkulose-Bibliothek. Beihefte zur Zeitschrift für Tuberkulose. Herausgegeben von Prof. Dr. Lydia Rabinowitsch. Paper. Price, 5 marks. Pp. 88. Leipsic. Johann Ambrosius Barth, 1927.

NOTES ON THE EPIDEMIOLOGY OF ENTERIC FEVERS IN THE FEDERATED MALAY STATES. By William Fletcher, M.D., M.R.C.P. Bulletin from the Institute for Medical Research, Kuala Lumpur, Federated Malay States No. 4. Paper. Pp. 7. Kuala Lumpur: Federated Malay States Government Printing Office, 1927.

ATLAS DE RADIOGRAPHIE OSSEUSE. I. Squelette normal. Par G. Haret, A. Dariaux, electro-radiologistes de Hôpitaux de Paris, et Jean Quénu, professeur agrégé à la Faculté de médecine des Hôpitaux de Paris. Cloth. Price, 160 francs. Pp. 129, with 123 plates. Paris: Masson & Cie, 1927.

AUSTRALASIAN TICKS. By J. W. Fielding, Australian Institute of Tropical Medicine, Townsville, North Queensland. Commonwealth of Australia Service Publication, No. 9. Paper. Pp. 114, with illustrations. Melbourne, 1926.

NINTH ANNUAL REPORT OF THE DIVISION OF SOCIAL HYGIENE NEW YORK STATE DEPARTMENT OF HEALTH COOPERATING WITH UNITED STATES PUBLIC HEALTH SERVICE FOR THE YEAR 1926. Paper. Pp. 52. Albany, 1927.

L'ANGINE DE POITRINE ET L'ANGINE ABDOMINALE. Par D. Daniélopolu, professeur de clinique médicale à la Faculté de médecine de Bucarest. Paper. Price, 140 francs. Pp. 443, with illustrations. Paris: Masson & Cie, 1927.

SAINT BARTHOLOMEW'S HOSPITAL REPORTS. Vol. LX. Edited by W. McAdam Eccles, and others. Cloth. Price, 21/-net. Pp. 203, with illustrations. London: John Murray, 1927.

UNITED FRUIT COMPANY: MEDICAL DEPARTMENT. FIFTEENTH ANNUAL REPORT. 1926. Paper. Pp. 355, with illustrations. New York, 1926.

Medicolegal

As to Duty of Injured Employee to Accept Treatment

(R. N. McCulloh & Co. et al. v. Restivo (Md.), 136 Atl. R. 54)

The Court of Appeals of Maryland says, in this proceeding under the workmen's compensation act, that it may be conceded that it is the duty of an injured employee to accept any medical or surgical assistance available to him which offers a reasonable hope for the lessening of any disability resulting from the injury for which he is compensated, provided such assistance involves no real risk to life or health, and is not likely to cause such pain or inconvenience that as a reasonably prudent man he could not be expected to undergo it. But those qualifications are quite as vital as the rule itself and cannot be disregarded in any application of it. In other words, the question is not simply whether the claimant refused medical or surgical attention, but whether, under the circumstances of the case, his refusal to accept such treatment was arbitrary or unreasonable. The fact that the jury in this case found that the injured employee had refused to accept medical or surgical attention, and that his refusal prolonged or aggravated his injury, did not determine his right to further compensation, because it may have been that the treatment offered, even if it was the proper treatment, would have subjected him to such risk, pain or inconvenience that as a reasonably prudent and careful man he would have preferred to endure the existing disability rather than accept the treatment.

Delaying Appendectomy—Calling Another Physician

(Black Mountain Corporation v. Thomas (Ky.), 291 S. W. R. 737)

The Court of Appeals of Kentucky, in reversing a judgment for $750 damages which was rendered in favor of plaintiff Thomas, says that he was in the service of the defendant corporation, which entered into an agreement with its employees to furnish them a competent physician to attend to their medical needs and also furnish them hospital services, for a monthly sum retained out of their wages. The company had employed a physician and an assistant physician —both of them competent physicians. On a Wednesday the plaintiff met the physician and told him that he had cramping and pains in the side. The physician told him that he had cramp colic and gave him some tablets. The physician left that evening; and the next day the plaintiff, who was still suffering, sent for the assistant physician, who said that he had cramp colic and gave him some tablets. It was disputed as to whether the assistant came back on Friday; but agreed that he came on Saturday, and again on Sunday. The assistant testified that on Sunday morning he told the plaintiff that he thought he had typhoid, but could not tell positively until a little more time elapsed. The plaintiff's father then went for another physician who, after an examination was made, said that he could not tell exactly what was the matter unless he gave him a blood test, and told the father to go and get the assistant physician to take one. The father went to see the assistant, and said that he refused to come. The assistant said that he told the father that he had no business calling in another physician without consulting him, and that the other physician could take the blood test if he wanted to; also, that if they needed him further to let him know. Thereupon the father went for the other physician, who came and took the blood test, but was still undecided as to whether the trouble was typhoid or appendicitis, and said that he would make another test in the morning. The next morning he found that the conditions had so changed that he then advised an immediate operation. The plaintiff was taken to his hospital, operated on, and remained there about four months.

The defendant company, which the plaintiff sued for damages, insisted that, on the facts, the court should have instructed the jury peremptorily to find for the defendant on the ground that no application was made to take the patient to the hospital; that the physician did attend him; and that, if he made any mistake in diagnosis, the defendant was not

liable for it, even though the physician might be liable for malpractice. The gist of the plaintiff's action as to his loss of time and suffering was that he was not operated on in time, and that, if he had been sooner operated on he would not have lost four months' time or suffered the pain and agony which he endured. But the failure to operate on him sooner was due to the fact that the assistant physician thought he had typhoid, and if this was true he should not have been operated on. Under the rule, where the company employs competent and skilful physicians, the defendant was not responsible if the assistant physician was negligent in not discovering sooner what was the matter with the plaintiff, though the physician might be liable if he failed to treat him with proper care and skill.

The circuit court erred in admitting the evidence of several witnesses, stating that the company's physician first mentioned, after his return and about the time the suit was brought, told them that he knew all the time that the plaintiff had appendicitis. While the statements of an agent made during the transaction and as a part of it are competent against his principal, his statements after the transaction is closed, as to what then occurred, are never so admitted. This evidence was very prejudicial to the defendant.

The court properly refused to admit evidence as to the custom of physicians not to return to a patient after another physician is called in. This custom may be all right where there is no contract, but where there is a contract for services such a custom cannot be considered.

Evidence as to why the physician first mentioned was away should have been excluded. The case should go to the jury on the question whether there was a breach of the contract. There was a conflict of evidence as to whether the assistant physician refused to treat the plaintiff any longer, and on this question the case should go to the jury. If there was a breach of the contract, the measure of recovery would be the reasonable cost of procuring the care and attention provided by the contract. Wherefore the cause was remanded for a new trial.

Malpractice Charged in Infection After Hypodermic

(Moore et al. v. Smith (Ala.), 111 So. R. 918)

The Supreme Court of Alabama, in reversing a judgment for $15,000 damages which was rendered in favor of the plaintiff, says that she brought this action as an administratrix to recover for the death of one Smith alleged to have been caused by the negligence of the defendant physicians. The evidence disclosed that the physician to whom the man first applied for treatment found him to be in a low state of vitality, suffering with a severe secondary anemia and malaria. The physician prescribed a course of treatment consisting of sodium cacodylate, to be administered hypodermically. After he had administered two treatments, he was called out of town, and when the man applied at his office for another treatment, the nurse or attendant in the office called another of the defendants to administer the treatment. The second physician testified that he used the instruments of the first, after they had been properly sterilized. The evidence was undisputed that the practice which he pursued was the proper practice, but about twenty-four hours later the man called at the office and complained of pain in his arm. The attendant again summoned the second physician, who directed that iodine be administered to the arm. The man died on about the eighth day after that. The physician first mentioned was stricken out as a defendant by amendment to the complaint, and the case went to the jury as to the second physician and a third one, who treated the man in consultation with another physician after the infection had set in.

A civil action for malpractice against a physician and surgeon may be sustained on proof of a failure to exercise reasonable and ordinary care, diligence and skill in respect to the duty so assumed and undertaken as physician and surgeon—such care and skill as physicians and surgeons in the same general neighborhood, pursuing the same general line of practice, ordinarily employ and exercise in a like case. Obvious corollaries to this rule of liability are that a physician or surgeon, unless by express undertaking, does not warrant a cure or a successful result, and is not liable for an honest mistake or error of judgment in making a diagnosis, or prescribing a mode of treatment, where the proper course is subject to reasonable doubt.

In this case the burden of proof was on the plaintiff to show either negligence or want of proper knowledge and skill on the part of the defendants, in their professional treatment of the man, which proximately caused the infection—septicemia—following the second physician's hypodermic injection of sodium cacodylate into the patient's arm. The mere possibility of such a result was not sufficient. The doctrine of res ipsa loquitur (the thing speaks for itself) does not apply to the mere fact of a blood infection, however closely, in temporal sequence, it may follow a medical treatment. The burden of proof is not shifted by showing that an unsuccessful result has attended the treatment of the patient by the physician. A very thorough examination of the evidence in this case failed to discover anything that had any tendency to show that the second physician was lacking in the required knowledge or skill in his profession, or that he was guilty of any negligence in the treatment of the man. In fact, the undisputed evidence affirmatively showed, as to every element involved in the issue, an entire absence of culpability. This court infers from the record of the trial that the plaintiff relied mainly on the fact that the man's arm became infected and inflamed for the first time within a day or two after the last treatment, thereby establishing the relation of cause and effect and permitting the inference of negligence or want of skill in the treatment. But, conceding the relation in some degree of cause and effect, this would not permit a reasonable inference of culpability on the part of the physician. Such an inference would be at best a mere conjecture—consistent, indeed, with the facts, but only one of a number of equally plausible guesses, none of which found any definite support in the evidence.

Declarations of the man made to the physician with whom the third physician treated him in consultation, and made on the occasion of his treatment, that he had followed after a patient who had an infection and that he did not know whether the physician (the second one) washed his hands or not, were erroneously admitted in evidence over seasonable and apt suggestions. The declarations were objectionable on the ground, for one thing, that they were hearsay or self-serving declarations.

Death from Food Poisoning or Acute Indigestion

(Newsoms v. Commercial Casualty Ins. Co. (Va.), 137 S. E. R. 456)

The Supreme Court of Appeals of Virginia, in reversing a judgment which set aside a verdict that was rendered in favor of the plaintiff, says this action was brought by the beneficiary in a policy of insurance to recover for the death of the insured. One morning the latter, at about 9:30 or 10 o'clock, ate for his breakfast some cold canned beans and white meat, shortly after which he was taken ill with violent cramps and began vomiting the pork and beans, and declared that the beans had made him ill. He died at 11:40 a. m. Admitting that death resulted from food poisoning or acute indigestion brought on by eating the beans, the question was whether the insured died of the effects of injury resulting, exclusively of other causes, from bodily injury sustained through external, violent and accidental means, within the terms of the policy. The authorities are not in entire harmony on this question, but the weight of authority is to the effect that death resulting under the circumstances of this case, or circumstances similar to those testified to here, meets the condition of a policy requiring that death shall result from injuries sustained through external, violent and accidental means. The evidence showed that the insured had been in good health for much over a year and up until the very minute of eating the canned pork and beans; that there was no thought of injury in any way, nor had there been any warning by even slight sickness that the beans would be apt to affect the insured's health in any extraordinary way. He did not know that they were harmful, nor are they inherently so by common knowledge. Under the circumstances, therefore, the death and accident were anything but usual and anything else but expected. The trial court seemed to think that there was not sufficient

evidence to justify the jury in concluding that eating the beans had caused the death of the insured, but the supreme court of appeals is of the opinion that, on the whole case, the question of the cause of death was one for determination by the jury, and its finding was binding on the court.

Snellen Test—Rules of American Medical Association

(De Caprio v. General Electric Co. et al. (N. Y.), 155 N. E. R. 756)

The Court of Appeals of New York had here an appeal and a certified question to answer after the appellate division of the supreme court of the state had reversed an award of the state industrial board (218 N. Y. Supp. 213). The question certified (219 N. Y. Supp. 797) was:

> Was there any evidence in the record on which the state industrial board had jurisdiction to make a finding of fact of permanent loss of 80 per cent of useful vision of the right eye, and following that an award for the total loss of useful vision of said right eye?

The court of appeals says that the question was whether any standard method of determining loss of visual efficiency has been so established as to make all others erroneous, as matter of law, or whether a difference of opinion may exist among experts as to the proper interpretation of recognized tests. This court is unable to say that the physician's interpretation of the Snellen test was erroneous, as matter of law, although he found 80 percentage of loss of vision, when the American Medical Association would read his formula as indicating only 51.1 percentage of loss of vision. Until the legislature or the state industrial board establishes a proper standard method of determining the question, it must remain one of fact. The weight of authority doubtless inclines to the rules adopted by the American Medical Association. The order appealed from should be reversed and the award of the state industrial board affirmed, and the question certified answered in the affirmative.

Evidence of Practicing Medicine—Law Constitutional

(Reeves v. State (Okla.), 255 Pac. R. 162)

The Criminal Court of Appeals of Oklahoma, in affirming a conviction of defendant Reeves of practicing medicine without a license, says that the information charged that he practiced medicine by injecting a preparation of arsenic as a treatment for syphilis into the veins of a certain patient. The record disclosed that he operated a sanatorium; that the patient named went to it, was examined by the defendant, and was informed that she had syphilis; that he undertook to treat her, and injected the drug into her arm as charged. There was sufficient competent evidence reasonably to sustain the allegations in the information. It is well settled that where there is competent evidence, although it may be conflicting, reasonably tending to sustain the charge, the court should not sustain a demurrer, but the question of fact should be submitted to the jury, and its verdict will be binding.

There was some contention made that the trial court admitted incompetent evidence. This was directed to evidence that the medical treatment given by the defendant was not a proper treatment, and that the evidence was not confined to the particular day alleged. This matter presented no such error as would in any manner tend to bring about a miscarriage of justice or that deprived the defendant of any substantial right. An error in the admission of evidence does not require a reversal, unless such error probably resulted in a miscarriage of justice or deprived a defendant of some constitutional or statutory right.

The information charged a violation of the law in a particular manner by the injection of a drug into the veins. The instructions told the jury that it must find the defendant guilty as charged before it would be warranted in returning a verdict against him. There was evidence of only one offense as charged by the injection of a drug, and, while there was evidence of things done at other times by the defendant tending to prove a practice of medicine in a different manner, none of them referred to the practice of medicine by the injection of a drug into the arm as charged in the information. These other matters referred to simply tended to cast light on the offense charged, and for this purpose they were admissible. Where evidence tends to cast light on the guilt or innocence of the defendant of the offense for which he is on trial, it is admissible although it may tend to prove him guilty of some other offense.

The medical practice act (chapter 59, session laws of 1923) is not in violation of any provision of the state constitution. The defendant contended that it is unconstitutional under the authority of *Ex parte Pope* (Okl. Cr. App.), 242 Pac. 290. This contention was fully considered in the case of *Reeves* v. *State* (Okl. Cr. App.), 253 Pac. 511, and decided adversely to the contention here made. It was also argued here that the act is unconstitutional under section 57, article 5, of the constitution, because the title of the act is insufficient, but that contention cannot be sustained.

Contracts of Insane Persons

(Wadford v. Gillette et al. (N. C.), 137 S. E. R. 314)

The Supreme Court of North Carolina says that the principles of law governing the contracts of insane persons may be stated substantially as follows: 1. The contract of a person not judicially declared to be insane is voidable and not void. If the insanity has been formally adjudicated, subsequent contracts made by such person are void. 2. A party dealing with an insane person, knowing his mental condition, is deemed to perpetrate a fraud on such insane person and on his rights. 3. When a contract with an insane person is executed and completed, and is fair and made in good faith, without notice of mental incapacity, and the parties cannot again be put in statu quo (their original position), such contract is valid and enforceable. 4. However, when mental incapacity is shown, the burden is so far shifted that the agreement will be set aside unless the party claiming under the contract, by proper proof, establishes the fact that he was ignorant of the mental incapacity and had no notice of it which would put a reasonably prudent person on inquiry, and that no unfair advantage was taken, and that the insane person is not able to restore the consideration or to make adequate compensation for it. 5. The same principles that control the contracts of insane persons apply to negotiable instruments.

Society Proceedings

COMING MEETINGS

American Association of Railway Surgeons, Chicago, November 2-4. Dr. Louis J. Mitchell, 29 East Madison Street, Chicago, Secretary.

American Hospital Association, Minneapolis, Oct. 10-14. Dr. William H. Walsh, 18 East Division Street, Chicago, Executive Secretary.

American Public Health Association, Cincinnati, Oct. 17-20. Mr. Homer N. Calver, 370 Seventh Avenue, New York, Executive Secretary.

American Roentgen Ray Society, Montreal, Canada, September 20-23. Dr. C. L. Martin, Baylor Hospital, Dallas, Texas, Secretary.

American Society of Tropical Medicine, Boston, October 21-22. Dr. B. Schwartz, P. O. Box 131, Pennsylvania Avenue Station, Washington, D. C., Secretary.

Association of American Medical Colleges, Montreal, October 24-26. Dr. F. C. Zapffe, 25 East Washington Street, Chicago, Secretary.

Association of Military Surgeons of the United States, Carlisle Barracks, Pennsylvania, October 6-8. Dr. J. R. Kean, Army Medical Museum, Washington, D. C., Secretary.

Central States Pediatric Society, Cleveland, Oct. 14-15. Dr. H. T. Price, Westinghouse Building, Pittsburgh, Secretary.

Delaware State Medical Society, Farnhurst, Oct. 11-12. Dr. W. O. La Motte, Industrial Trust Building, Wilmington, Secretary.

Indiana State Medical Association, Indianapolis, September 28-30. Mr. T. A. Hendricks, Hume-Mansur Building, Indianapolis, Executive Secretary.

Inter-State Post Graduate Medical Association of North America, Kansas City, Mo., October 17-21. Dr. W. B. Peck, 82 Stephenson Street, Freeport, Ill., Managing Director.

Kentucky State Medical Association, Owensboro, October 3-6. Dr. A. T. McCormack, 532 West Main Street, Louisville, Secretary.

Nevada State Medical Association, Bowers' Mansion, September 23-24. Dr. H. J. Brown, Medico-Dental Building, Reno, Secretary.

New York and New England Association of Railway Surgeons, New York, Oct. 21-22. Dr. Horace H. LeSeur, 41 Jackson Street, Batavia, N. Y., Secretary.

Pennsylvania, Medical Society of the State of, Pittsburgh, Oct. 3-6. Dr. Walter F. Donaldson, Jenkins Arcade, Pittsburgh, Secretary.

Vermont State Medical Society, Middlebury, Oct. 13-14. Dr. W. G. Ricker, 29 Main Street, St. Johnsbury, Secretary.

Virginia, Medical Society of, Petersburg, Oct. 18-20. Miss Agnes V. Edwards, 104½ West Grace St., Richmond, Secretary.

Wisconsin, State Medical Society of, Eau Claire, September 21-23. Mr. J. G. Crownhart, 153 Oneida Street, Milwaukee, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American J. of Med. Sciences, Philadelphia

174: 1-150 (July) 1927

*Amebiasis. J. H. Musser, New Orleans.—p. 1.
*Lymphosarcoma. D. Symmers, New York.—p. 9.
*Anginal Syndrome in Pernicious Anemia. F. A. Willius and H. Z. Giffin, Rochester, Minn.—p. 30.
*Ayerza's Disease. G. Cheney, San Francisco.—p. 34.
*Newer Hematologic Aspects of Neutrophils in Infections. A. Weiss, New York.—p. 45.
*Rosacea with Accompanying Conditions. R. H. Rulison, New York.—p. 60.
Maintenance of Leukocyte Level and Changes During Irradiation. R. Isaacs and A. C. Danielian, Boston.—p. 70.
Coarctation of Aorta with Staphylococcus Albus Endocarditis. G. M. Mackenzie, New York.—p. 87.
*Meaning of Extrasystoles. S. D'Irsay, New York.—p. 96.
*Seasonal Hay-Fever. A. Vander Veer, Jr., R. A. Cooke and W. C. Spain, New York.—p. 101.
Subjective Audition of Pathologic Pulmonary Sounds. N. Michelson, New York.—p. 113.

Amebiasis.—A review of fifty-one cases of amebiasis is presented by Musser. A working classification is discussed, together with the clinical manifestations of several classes. It is believed that the disease occurs much more frequently than is generally considered to be the case. Amebiasis is undoubtedly common in the far South and in some of its manifestations, at least, is more frequent in the North than is generally recognized.

Lymphosarcoma. — Seventeen cases of lymphosarcoma encountered among 11,925 autopsies are analyzed by Symmers. Five cases were characterized by predominant enlargement of the lymph nodes; four, by predominant involvement of the lymphoid structures of the gastro-intestinal tract; one of the prostate gland, and seven cases of lymphosarcoma of the thymic remnants marked by ravenous destruction of neighboring tissues, in two of which death occurred after the intervention of acute leukemia.

Anginal Syndrome in Pernicious Anemia.—Among 1,560 consecutive cases of pernicious anemia reviewed by Willius and Giffin, the anginal syndrome occurred in forty-three (2.7 per cent). The average age of the patients was 53.5 years, and 56 per cent of the patients were between 50 and 60 years of age. There were almost twice as many males as females. The anginal syndrome did not differ subjectively in any essential way from that of angina pectoris. Radiation of the pain was less frequent and agony was continuous in the severest cases of angina. The anginal syndrome occurred chiefly in cases of long duration. Objective examination of the heart did not show any significant changes save those secondary to anemia. The degree of anemia did not bear a direct relationship to the occurrence of angina. Electrocardiographic examinations did not show significant abnormalities. In one necropsy only fatty myocardial changes were found. There was no aortic or coronary sclerosis. In fifteen necropsies of other patients with pernicious anemia, the average age was 53 and only three showed aortic and coronary sclerosis. The anginal syndrome in pernicious anemia is due presumably to anoxemia of the myocardium and not to coronary or aortic sclerosis.

Ayerza's Disease.—Two cases are reported by Cheney, and it is suggested that the term Ayerza's disease be restricted to those cases of pulmonary artery sclerosis and resulting right heart hypertrophy which are due to syphilis. A survey of the literature includes all known cases and emphasizes the rarity of the malady. A practically complete bibliography of Ayerza's disease is appended.

Study of Neutrophils in Infection.—On the basis of 1,000 blood examinations, Weiss concludes that with the height of infection there is a concomitant peak in the number of immature leukocytes. As the disease process tends to lessen and convalescence sets in there is a drop of the "staff" forms to the normal quota (3 to 5 per cent). Persistence of the high level of "staff" forms means some complication. Crisis in pneumonia is very often accompanied by a "staff" count approaching 50 per cent of the total leukocyte count. Presence of a count nearing 50 per cent of immature forms during the early days of a pneumonia means generally a fatal prognosis. The chart of the immature cells coincides often more accurately with the course of the illness than the temperature. The percentage of immature cells is by far more valuable than the total leukocyte count or the percentage of neutrophils.

Rosacea with Constitutional Symptoms.—Complete gastro-intestinal examinations were made by Rulison on fifty patients suffering from rosacea. Two thirds of them were found to have a group of functional abnormalities occurring with sufficient uniformity to suggest that they form an essential part of the disease. These abnormalities were a neurotic tendency, subnormal weight, low blood pressure, poor muscle tone, faulty posture, visceroptosis, chronic constipation, spasticity of the large bowel, and gastric subacidity. Correction of these conditions together with local treatment resulted in rapid and lasting improvement in most cases.

Meaning of Extrasystoles.—It is suggested by D'Irsay that multifocal extrasystoles are expressions of some change in the myocardium (possibly some change in its nutrition) resulting in an increased irritability of that tissue. Unifocal extrasystoles, on the other hand, may very well be but expressions of extracardial stimulation.

Seasonal Hay-Fever.—Of fifty cases in which Vander Veer et al. injected pollen extracts, satisfactory results were reported in 86 per cent in 1925 with weekly injections; while 95 per cent of the same fifty cases were satisfactory in 1926 after a year of monthly injections. This shows a definite improvement with the latter form of treatment. Constitutional reactions were slightly more frequent, occurring in 0.66 per cent of the injections, as compared with 0.13 per cent the year before in the same cases.

American Journal of Ophthalmology, Chicago

10: 479-566 (July) 1927

Spontaneous Separation of Choroid Simulating Choroidal Sarcoma. H. V. Würdemann, Seattle, and F. H. Verhoeff, Boston.—p. 479.
Bilateral Lymphoblastoma of Orbit with Leukemia Showing Cell Inclusions. R. E. Wright, Madras, India.—p. 482.
Parinaud's Conjunctivitis (Leptothricosis of Conjunctiva). S. R. Gifford, Omaha.—p. 484.
Concomitant Divergent Strabismus. J. H. Dunnington, New York.—p. 490.
Hyaline Thrombosis of Choroidal Vessels in Glaucoma. C. H. Lockwood, Chicago.—p. 493.
Colonic Synergistic Analgesia. H. F. Hill, Waterville, Me.—p. 500.
Case of Ocular Leprosy. R. M. Rogers, New York.—p. 503.
Refraction. W. W. Lewis, St. Paul.—p. 506.
Pigmented Tumor of Eyelids. E. W. Arndt, London.—p. 514.
Injury to Cornea by Indelible Pencil. E. Szokolik, Szombathely, Hungary.—p. 515.
Obstruction of Central Retinal Artery. J. Rosenbaum, Montreal.—p. 516.
Late Traumatic Detachment of Retina, Psychic Blindness. C. E. Ide, Tucson, Ariz.—p. 516.

Annals of Surgery, Philadelphia

86: 1-160 (July) 1927

Relative Value of Special Senses to Surgeon. W. J. Mayo, Rochester, Minn.—p. 1.
*Abdominal Surgery in Presence of Infection Caused by Streptococcus Hemolyticus. A. Primrose, Toronto.—p. 6.
Secondary Operations on Abdomen. J. B. Deaver, Philadelphia.—p. 11.
*Value of Radiographic Contrast Solutions in Study of Brain Abscess. E. W. Rockey, Portland, Ore.—p. 22.
*Method of Removing Discrete Adenoma of Thyroid. F. H. Lahey, Boston.—p. 31.
*Bilateral Atelectasis of Lung. H. Bergamini and L. A. Shepard, New York.—p. 35.
*Embolic and Metastatic Phenomena in Pleural and Pulmonary Infections. P. W. Aschner, New York.—p. 41.
*Subcutaneous Rupture of Liver. A. J. Graham, Chicago.—p. 51.
*Treatment of Megacolon. R. W. Bolling, New York.—p. 62.
*Muscle-Fascia Suture in Herniotomy. M. S. Rosenblatt and W. B. Cooksey, Detroit.—p. 71.
*Recurrent Hernia. G. P. LaRoque, Richmond, Va.—p. 78.
*Recurrence After Operation for Oblique Inguinal Hernia. J. Selinger, New York.—p. 82.

Surgical Significance of Rectosigmoid Sphincter. E. Martin and V. G. Burden, Philadelphia.—p. 86.
*Chronic Synovial Tuberculosis. C. W. Peabody, Detroit.—p. 92.
*Pathogenesis and Treatment of Acute Epiphysitis. A. O. Wilensky, New York.—p. 105.
Reconstruction Operation for Deformity Secondary to Disease at Hip-Joint. R. Whitman, New York.—p. 123.

Abdominal Surgery.—Primrose emphasizes the importance of observing certain principles of treatment in operative technic in abdominal surgery, such as the avoidance of unnecessary trauma, the exercise of sound judgment in determining the indications for drainage, and the extreme danger of employing drainage in certain cases.

Radiography of Brain Abscess.—Rockey reports his experience with the use of a 20 per cent aqueous solution of sodium iodide in cases of brain abscess. The results were very satisfactory.

Removal of Thyroid Adenoma.—The plan described by Lahey is said to protect the recurrent laryngeal nerve and the inferior parathyroid body. It lessens the amount of bleeding and simplifies the removal of these discrete adenomas.

Bilateral Atelactasis.—Sudden death during operation, with autopsy findings of massive collapse of the lungs, is the essence of the two cases reported by Bergamini and Shepard.

Embolic and Metastatic Phenomena in Pleural and Pulmonary Infections.—Aschner reports cases of aseptic cerebral embolism, embolism of arteries of the extremities, metastatic infections, and brain abscess. In six fatal cases, cerebral air embolism was suspected, but in only one case did postmortem examination confirm this diagnosis. Of sixty-nine cases of empyema coming to autopsy, inflammatory lesions were present in the lungs in every instance. Of these, forty-seven, more than two thirds, showed miliary or large abscesses, bronchiectasis and gangrene. The clinical observation of the association of embolic phenomena with hemoptysis and postoperative hemorrhage is in accordance with the postmortem evidence of vascular lesions in the lung parenchyma as the underlying causative factor of such phenomena.

Subcutaneous Rupture of Liver.—Graham gives a summary of ten cases occurring in the practice of colleagues and reports an additional personal case. The clinical history of the condition is discussed.

Treatment of Megacolon.—It seems to Bolling highly unreasonable to base a selection of treatment in an individual case on statistics resulting from the compilation of a series of cases differing in nature and degree and derived from widely separated sources. No general rule for treatment can be formulated. Type and degree of involvement, and to some extent the intelligence and social status of the patient must be carefully weighed. Medical and surgical treatment have their indications and limitations, and the treatment of each individual case must be decided solely on the merits of that case.

Muscle-Fascia Suture in Herniotomy.—In an attempt to find a satisfactory technic in the inguinal region for muscle-fascia suture, Rosenblatt and Cooksey performed twenty-seven operations on dogs. The edge of the rectus muscle was brought over and sutured by interrupted single sutures of twisted silk to Poupart's ligament, the fascia of the external oblique having been incised as in any hernia repair, and the areolar tissue elements being gently stripped from the muscle and Poupart's ligament before being sutured. Also, the internal oblique muscle was sutured to the reflected margin of Poupart's ligament, the areolar tissue being removed as before. Firm union resulted in all cases in which the areolar tissue was removed from the muscle and fascia before the suturing. On the thigh of dogs no union occurred when the areolar tissue was left intact. The general type of union is the same as that between fascia and fascia.

Recurrent Hernia.—In LaRoque's opinion, recurrent hernia represents the incompletely removed original hernia, or the development of incisional rupture following breakage of sutures or tissues by coughing, vomiting or wound infection. The surest way to avoid the need of a second operation to remove a hernia is to remove all the sac and redundant surrounding peritoneum at the first operation. He describes an extremely simple, safe and efficient method of accomplishing this, one that he has employed in more than twelve hundred cases.

Recurrence of Hernia.—Two hundred and sixty-six replies to a questionnaire are analyzed by Selinger. There were two deaths in the series: one due to pulmonary embolus and the other to lobar pneumonia. There were 258 cures and six recurrences, 2.255 per cent. Two of these were at the internal and four at the external abdominal ring.

Chronic Synovial Tuberculosis.—Five patients suffering from a chronic joint disorder of from two to seven years' duration presented physical observations inconsistent with those commonly looked for in established joint tuberculosis, and roentgen-ray films negative for bone destruction or absorption. All came to radical operation widely exposing the joint and revealing the pathologic changes of long-standing tuberculosis throughout the synovial membrane unaccompanied by any lesion of bone. Four were adults between 23 and 31, in excellent general health and free from constitutional stigmas of tuberculosis. In none did a preoperative diagnosis of joint tuberculosis seem to have clinical support.

Acute Epiphysitis.—Wilensky endeavors to explain the essential mechanism of acute epiphysitis; the pathogenesis whereby the full development of such foci of infection is accomplished; the clinical manifestations that accompany these changes; the ways in which complications, especially joint complications, develop and the character and form of the latter; the effects the latter have in changing the dominant characteristics of the clinical picture, and the principles according to which treatment should be undertaken.

Archives of Dermatology and Syphilology, Chicago

16: 1-130 (July) 1927

Skin Picture in Hematopoietic Diseases. O. Gans, Heidelberg, Germany.—p. 1.
*Lupus Erythematosus: Treatment with Tuberculin. A. B. Cannon and G. G. Ornstein, New York.—p. 8.
*Predisposing Factors of Eczema. L. G. Beinhauer, Pittsburgh.—p. 12.
*Sugar Content of Whole Blood in Syphilis. I. Rosen and F. Krasnow, New York.—p. 16.
*Lattice Fibers: Diagnostic Value in Epithelioma. S. C. Way, San Francisco.—p. 25.
*Extensive Sarcoma of Skin Treated by Unfiltered Roentgen Ray. L. F. Craver, New York.—p. 35.
*Dermatitis Produced by Balsam of Peru. C. L. Cummer, Cleveland.—p. 44.
*Epidemic Scabies. P. E. Bechet, New York.—p. 51.

Tuberculin Treatment of Lupus Erythematosus.—Fifteen patients were treated by Cannon and Ornstein with Koch's old tuberculin. Of the fifteen, three made an almost complete recovery, seven showed marked improvement, and five were unimproved. Hypersensitiveness to tuberculin was noted in all cases of lupus erythematosus. The hypersensitiveness was especially marked in those cases in which improvement was noted under tuberculin therapy.

Predisposing Factors of Eczema.—Every one of the 114 cases of eczema studied by Beinhauer showed definite constitutional disease. Only twenty-seven patients (23.6 per cent) suffering from other dermatologic lesions showed definite constitutional disease. Impaired function of the excretory and metabolic systems (69.3 per cent) comprised the most common pathologic conditions associated with eczema.

Blood Sugar Content in Syphilis.—Rosen and Krasnow studied 120 syphilitic patients. Of these, 68 per cent showed a blood sugar content within the range from 70 to 100 mg. per hundred cubic centimeters of whole blood; 9 per cent showed a value below 70 mg. per hundred cubic centimeters, and 23 per cent a value above 100 mg. per hundred cubic centimeters. Patients who showed a low or high blood sugar content when on an unrestricted diet did not always give a corresponding value when fasting.

Lattice Fibers in Epithelioma.—Way asserts that an epithelioma may be said to be benign when it is entirely surrounded by a dense, thick network of lattice fibers, provided the cancer cells do not penetrate into the surrounding fibers and there is a definite line of demarcation between the two. An epithelioma of the ordinary type may be said to be malignant when the lattice fibers surrounding the cancerous growth are few or practically absent, and when, instead of showing

a sharp line of demarcation between the two, the cancer cells penetrate into the bordering lattice fibers.

Roentgen-Ray Treatment of Skin Sarcoma.—The skin of a large part of one lower extremity of Craver's patient was occupied by multiple bleeding and necrotic tumors, so that the patient was rendered an invalid by loss of blood and toxemia, and was almost an outcast by reason of the foul stench arising from his sores. Roentgen-ray treatment, however, cleared up the local condition completely. The technic of the unfiltered roentgen-ray treatment differed from that ordinarily used, in that the target-skin distance was greatly increased. This change made possible longer exposure, which covered a greater depth dose, despite lack of filtration.

Balsam of Peru Dermatitis.—Cummer's patient sustained a burn of the first degree of the right arm, neck and chest. An ointment containing balsam of Peru was applied and caused an infectious eczematoid dermatitis.

Epidemic Scabies.—Bechet reports five cases of scabies occurring in infants, aged from 5 to 10 days. The source of the infestation was a nurse who had a severe case of typical scabies. The disease was quickly checked by questioning the scabetic patients.

Archives of Internal Medicine, Chicago

40: 1-127 (July) 1927

*Carcinoma of Pancreas. E. D. Kiefer, Boston.—p. 1.
*Pathology of Metabolism in Obesity. H. C. Hagedorn, C. Holton and A. H. Johansen, Copenhagen, Denmark.—p. 30.
*Blood Pressure of Foreigners in China. J. H. Foster, Waterbury, Conn. —p. 38.
*Pathogenic Rôle of Trichocephalus Dispar (Trichuris Trichiura). M. Fernán-Núñez, Nashville, Tenn.—p. 46.
Quantitative Determination of Blood Amylase with Viscosimeter. R. Elman and J. M. McCaughan, St. Louis.—p. 58.
*Tuberculosis Following Delivery Originating from Genital Tuberculosis: Acute Miliary Form. J. R. Wiseman and H. W. Retan, Syracuse, N. Y.—p. 65.
*Effect of Thyroid Medication in Nephrosis. S. Liu, Peking, China.—p. 73.
*Arteriolar Lesions of Glomerulonephritis. A. M. Fishberg, New York. —p. 80.
*Multiple Myeloma. T. J. Charlton, Savannah, Ga.—p. 98.
Audibility of Bruit of Thyroid in Exophthalmic Goiter. I. Bram, Philadelphia.—p. 110.
*Paroxysmal Cyanosis Associated with Bilateral Thrombosis of Suprarenal Veins. E. F. Hirsch and J. A. Capps, Chicago.—p. 112.
*Postinfluenzal Bradycardia. A. S. Hyman, New York.—p. 120.

Carcinoma of Pancreas.—Kiefer gives brief synopses of the symptoms, positive observations and results in thirty-three cases of carcinoma of the pancreas.

Metabolism in Obesity.—A number of normal and obese persons have been examined by Hagedorn et al. by determining their respiratory quotients by means of a self-recording apparatus after they had for two days taken a diet consisting chiefly of carbohydrates. By this method a real difference between the mean respiratory quotient in obese and in normal persons has been found, the respiratory quotient in obese patients being lower than that in normal persons. The results confirm the hypothesis that obesity is due to a qualitative anomaly in metabolism, i. e., an abnormally increased transformation of carbohydrate into fat. It has been shown that a relation between the percentage overweight and the respiratory quotient in obese subjects is found, patients with great overweight having a particularly low respiratory quotient, while the patients with less overweight have a respiratory quotient which is nearer or within the normal zone.

Blood Pressure of Foreigners in China.—The blood pressure readings made by Foster of a series of Occidentals living in China shows that the average for foreigners is about the same as that of the local Chinese, and that the blood pressure of the majority of persons studied was lower in China than in America.

Pathogenic Rôle of Tricocephalus Dispar.—Fernán-Núñez states that in the Magdalena River valley of Colombia, 92 per cent of 1,336 persons examined had intestinal parasites, of which 41 per cent were *Trichocephalus dispar*. Sixty-two per cent of sixteen autopsies on persons who had died from various causes in Colombia showed *Trichocephalus* infestation, with localization in the cecum, appendix, and hepatic and splenic curvatures of the colon, sigmoid and rectum. *Trichocephalus dispar* is a definite cause of appendicitis. Many cases of so-called tropical idiopathic peritonitis are of heminthic origin. *Trichocephalus* is a factor in the transmission of infections through the intestinal tract, because of its tendency to perforate the intestinal wall, resulting in peritonitis, septicemia, perinephritis and pyelitis. Approximately 30 per cent of cases commonly diagnosed as amebic dysentery in tropical America are of trichocephalic origin. Anthelmintic treatment is specific in such cases. Purpura hemorrhagica can result from intoxication with the hemolytic enzymes injected in the host by *Trichocephalus*. Eosinophilia is commonly more constant and of higher degree in trichocephalic infection than in that produced by other nematodes, indicating that the small number of trichocephali which are usually found are capable of intoxicating the host more than are the usually large number of other helminths. *Trichocephalus* is associated with the hookworm in 33 per cent of all cases (in the tropics). As the hookworm treatment given by mouth is often ineffective against *Trichocephalus*, the campaigns against hookworm are not entirely effectual unless attention is given to the elimination of *Trichocephalus*. If it is not eliminated, its symptoms may be attributed to the hookworm. This oversight has been one of the causes why *Trichocephalus* has not received the study it deserves.

Tuberculosis Following Delivery.—Wiseman and Retan believe that acute miliary tuberculosis following delivery is undoubtedly more common than is generally realized. When women continue to have fever and repeated negative blood cultures after delivery, acute miliary tuberculosis should be considered. Routine roentgenograms of the chest may be of great diagnostic aid.

Effect of Thyroid Medication in Nephrosis.—Two cases of nephrosis are reported by Liu in which the effects of thyroid medication were observed. Thyroid therapy caused rapid disappearance of edema in one case, and accelerated discharge of edema in the other case when this slackened under ordinary eliminative treatment. In both cases there was subjective improvement and reduction of albuminuria. The data obtained, however, do not warrant the conclusion that nephrosis is dependent on a hypothyroid state. With a rise of basal metabolism following thyroid administration, there was a decrease of blood cholesterol and a tendency of blood proteins to increase.

Arteriolar Lesions of Glomerulonephritis.—The arterioles of various organs were studied by Fishberg in thirty-seven cases of diffuse glomerulonephritis. The arteriolar lesions of diffuse glomerulonephritis are of four histologically and pathogenetically distinct varieties: Acute necrotizing arteritis was found in the renal arterioles in three of eight patients dying during the acute stage of diffuse glomerulonephritis. Endarteritis obliterans was present in seventeen of twenty-nine cases of chronic diffuse glomerulonephritis in various stages. Arteriolosclerosis similar in histology and distribution of the lesions to that found in essential hypertension was present in all twelve cases of secondary contracted kidney. It was not found in early cases and was of but slight degree in the moderately advanced cases. Muscular hypertrophy in the media of the renal arterioles was well marked in many cases of chronic glomerulonephritis of considerable duration but still "active." It was not found in the early states. The fact that arteriolosclerosis of the same histology and distribution as that found in essential hypertension occurs in chronic glomerulonephritis of long duration is strong added evidence that this lesion is a consequence of the hypertension.

Multiple Myeloma.—Charlton reports a case of multiple myeloma occurring in a woman, aged 57, who had been under observation for more than two and one-half years. Attention was first directed to the condition by a pain in the back, made worse by pressure. Bence-Jones protein was found in the urine, and on the basis of these two conditions a provisional diagnosis of multiple myeloma was made; roentgen-ray observations confirmed the diagnosis. The blood picture was that of marked secondary anemia. The icteric index and hemosiderosis of the liver and spleen at autopsy suggesed that the anemia to a certain extent may have been of a hemolytic nature. The course of the disease was marked by progressive anemia and many pathologic

fractures. At autopsy several pathologic fractures were seen, and most of the bones were destroyed by the tumor growth of the marrow. The histologic structure of the tumor tissue was that of a plasmocytoma. No metastases were found, but plasma cells were present in the capillaries of the liver.

Paroxysmal Cyanosis with Thrombosis of Suprarenal Veins.—Hirsch and Capps make a report of the clinical symptoms in a patient with bilateral thrombosis of the suprarenal veins and acute retrogressive changes of the suprarenal glands in whose body a postmortem examination did not disclose any other complicating lesion. In addition to the usual symptoms of suprarenal insufficiency, such as asthenia, low blood pressure, gastro-intestinal disturbances and syncope, there were sudden attacks of extreme cyanosis, associated with dyspnea and unconsciousness. The suggestion is made that the cyanosis is due to suprarenal insufficiency rather than to weakness of the heart, and that the suprarenal gland may play a rôle in the utilization of oxygen by the tissues.

Postinfluenzal Bradycardia.—Hyman records four cases of bradycardial irregularities discovered among postinfluenzal cases. All the patients had a rather typical attack of influenza with fever, malaise, generalized pains and aches, coryza and other irritations of the upper respiratory tract, headache and nausea. The relative toxemia was about the same in all cases, and the duration of the acute phase of the disease lasted from four to thirteen days, with a general average of about six days. The pulse rate in these cases varied from 36 to 60. In a case of complete heart block the rate fell to 28. The patient died about two weeks later.

Arkansas Medical Society Journal, Little Rock

24: 25-60 (July) 1927

Annual Address. J. M. Lemons, Pine Bluff.—p. 25.

Atlantic Med. Journal Harrisburg, Pa.

30: 609-674 (July) 1927

Physiology of Thyroid. E. C. Kendall, Rochester, Minn.—p. 609.
Diagnosis of Thyroid Diseases. D. Riesman, Philadelphia.—p. 612.
Treatment of Goiter. H. L. Foss, Danville, Pa.—p. 617.
Traumatism; Effects on Normal Development of Nervous System in Children. C. H. Henninger, Pittsburgh.—p. 622.
Orthopedic Treatment of Cerebral Spastic Paralysis. W. O. Markell, Pittsburgh.—p. 627.
*Tremor of Diaphragm. E. B. Edie, Uniontown, Pa.—p. 630.
Hemorrhagic Pancreatitis. G. A. Clark, Scranton, Pa.—p. 631.
Multiple Focal Infection. F. A. Faught, Philadelphia.—p. 623.
Pneumococcus Septicemia. E. M. Frost, Pittsburgh.—p. 633.
Pyloric Syndrome Due to Extragastro-Intestinal Lesion. J. Q. Thomas, Norristown, Pa.—p. 634.
Toxic Nephritis Treated by Renal Decapsulation. W. L. Armitage, Chester, Pa.—p. 635.
Deep Roentgen-Ray Treatment of Brain Tumors. M. H. Weinberg, Pittsburgh.—p. 636.
Inventions for Relief of Deafened. D. Macfarlan, Philadelphia.—p. 637.
Surgery of Gallbladder. M. Behrend, Philadelphia.—p. 638.

Tremor of Diaphragm.—Edie reports the case of a woman who has had a continuous tremor of the diaphragm since 1916. The tremor continues during sleep. The cause has not been found.

Boston Medical and Surgical Journal

197: 1-40 (July 7) 1927

*Fibroma of Intestines. H. C. Clifton and B. B. Landry, Hartford, Conn.—p. 8.
Investigation of Cases of Unidentified Illness in Haverhill, Massachusetts. L. A. Jones, Swampscott, Mass., and H. L. Lombard, Boston.—p. 19.
*Congenital Occlusion of Intestine. C. Loitman, Boston.—p. 21.

Fibroma of Ileum.—A case of fibroma of the ileum associated with intussusception is reported by Clifton and Landry and forty-five cases thus far reported are reviewed. Forty were encountered at operation and five at autopsy. The majority were found in the small intestines. These tumors most commonly assert themselves by bringing about intussusception.

Congenital Occlusion of Intestine.—Four cases are reported by Loitman. The ages of the patients were 5, 5, 4 and 2 days, respectively. The symptoms were those of intestinal obstruction in the new-born. In the first case the duodenum showed two annular constrictions and ended in a blind sac. There was no connection between this sac and the rest of the intestine, either by fibrous cord or by mesentery. The rest of the intestine appeared wormlike. In the second case at the middle of the jejunum the intestine was found to end in a blind pouch. There was a seven inch space and then the intestine continued as a stringlike cord; beyond that was a slight dilation the size of a pea bean and then the stringlike cord continued. The large intestine was the size of a crow's quill. In the third case, small cordlike atrophic loops of bowel below the jejunum were found. In the fourth case neither colon nor sigmoid could be found. Only a cord seemed to spring from the dilated portion of the proximal end of the rectum in place of the sigmoid and colon.

Colorado Medicine, Denver

24: 187-238 (July) 1927

State Psychopathic Hospital. F. G. Ebaugh, Denver.—p. 193.
Spinal Anesthesia in Cesarean Section. C. B. Ingraham, Denver.—p. 197.
Cataract Extraction. M. Black, Denver.—p. 201.
Colonic Stasis. C. B. Lyman, Denver.—p. 202.
Nonvenereal Syphilitic Infection. A. J. Markley and J. G. Hutton, Denver.—p. 205.
Toxemias of Pregnancy. F. H. Cary, Denver.—p. 207.
Gallbladder and Cystic Duct Distended with Calcium Carbonate Paste: Cholecystectomy. L. Freeman, Denver.—p. 210.
Typhoid Death Rate in Denver and Colorado. I. C. Hall, Denver.—p. 212.
*Pernicious Anemia and Minot-Murphy Diet. E. H. Mugrage, Denver.—p. 215.
*Cotton of Cottonwood Tree Factor in Hay-Fever. J. J. Waring and M. Pope, Denver.—p. 218.
Modified Measles in Private Practice. R. P. Forbes, B. Green and E. R. Mugrage, Denver.—p. 222.
Rocky Mountain Spotted Fever in Colorado. F. E. Becker, Denver.—p. 225.
Tuberculous Stenosis of Esophagus. H. L. Baum, Denver.—p. 228.
Brain Abscess: Four Cases. G. S. Johnson, Denver.—p. 229.
Tumor of Brain Stem. G. A. Moleen and C. R. Buikstra, Denver.—p. 232.
*Value of Cardiazol as Cardiac and Respiratory Stimulant. R. W. Whitehead and W. B. Draper, Denver.—p. 234.

Pernicious Anemia; Minot-Murphy Diet.—In a series of six cases in which this diet was used by Mugrage, the results obtained were encouraging. Sufficient time has not elapsed to consider the possibility of a cure in any case, but the remissions have been most marked with one exception, in which death ensued, but the laboratory data obtained pointed to a beginning remission in this case.

Cottonwood Tree and Hay-Fever.—Waring and Pope believe that the "cotton" of the cottonwood tree is a not uncommon cause of hay-fever. Six cases are reported that reacted not only to the pollen of the cottonwood but also to the extract of the "cotton."

Cardiazol.—The results obtained by Whitehead and Draper in twenty-five experiments on cats and dogs and in seven on normal human beings did not bring to light any action on blood pressure and respiration which would indicate that cardiazol is likely to be of value clinically. The most favorable action of the drug that occurred with any degree of constancy, namely, that of stimulation of respiration, could be produced with less dangerous side-effects by some such drug as alpha lobelin. The initial fall in blood pressure, which is its most constant, action on the circulatory system, might prove dangerous in badly shocked patients. The favorable action on auricular and ventricular contractions and on blood pressure was not only too uncertain in its appearance, but also too brief and insignificant to warrant its use as a cardiac stimulant. The drug seems to be especially likely to produce convulsions, and even when they do not appear it produces hyperirritability, as shown by the fact that tapping sharply on the table results in a brief spasm. This convulsive effect is sufficiently marked to render caution in its clinical use desirable.

J. Pharmacol. & Exper. Therapeutics

31: 201-268 (July) 1927

*Clinical Standardization of Digitalis. L. E. Martin, Baltimore.—p. 229.
*Effect of Insulin on Hypophysectomized Dogs. E. M. K. Geiling, D. Campbell and Y. Ishikawa, Baltimore.—p. 247.

Clinical Standardization of Digitalis.—In a series of nineteen cases of myocardial insufficiency treated with three

preparations of dried powdered digitalis leaves, Martin determined the relative potency of each by clinical methods. These relative potencies compared favorably with results obtained by biologic methods. Dried powdered digitalis leaf is advocated because it is stable and easy to administer in uniform doses. Digitalis may be given rapidly and should be given in considerable quantity until evidence of therapeutic effect is apparent and then continued at a rate approximately equal to the rate of excretion.

Effect of Insulin on Hypophysectomized Dogs.—The results presented by Geiling et al. afford ample proof in support of the statement that removal of the hypophysis renders a dog sensitive to insulin. Removal of the anterior lobe in such a way as to leave the posterior lobe undisturbed does not render the animal more reactive to insulin. This, together with the fact that anterior lobe extracts do not afford protection against insulin action in hypophysectomized animals, while postpituitary extracts do afford protection, seems to afford direct evidence that it is the "posterior lobe" hormone which antagonizes the action of insulin.

Journal of Urology, Baltimore

18: 1-136 (July) 1927

*Gonorrheal Arthritis in Adult Male: Treatment by Injection of Seminal Vesicles. T. C. Stellwagen and J. F. McCahey, Philadelphia.—p. 1.
Diagnosis of Epinephrine Tumors: Classification of Ephinephrine Tumor Syndromes: Cases. T. E. Gibson, San Francisco.—p. 33.
*Dilatation of Ureter in Female. W. J. Carson, Milwaukee.—p. 61.
*Primary Carcinoma of Diverticulum of Bladder. C. L. Deming, New Haven, Conn.—p. 73.
Perinephritic Abscess in Case of Horseshoe Kidney. H. S. Browne, Tulsa, Okla.—p. 85.
*Unusual Effect of Silver Nitrate on Renal Pelvis. J. K. Ormond, Detroit.—p. 91.
Ureteral Obstruction: Obstruction of Dilating Catheter in Ureter, Seat of Old Stricture. W. G. Schulte, Salt Lake City.—p. 95.
Value of Fulguration in Treatment of Stones Incarcerated in Vesical End of Ureter. R. L. Dourmashkin, New York.—p. 99.
Final Report of Case 2 of Previously Published Horseshoe Kidney Cases. D. N. Eisendrath and C. C. Guy, Chicago.—p. 109.
*Enormous Prostatic Adenoma. H. L. Douglass, Nashville, Tenn.—p. 115.
*Autolysis of Testicle. E. Andrews and R. Oslund, Chicago.—p. 121.
Cystoscope for Fulguration of Bladder Tumors. O. S. Lowsley, New York.—p. 127.

Treatment of Gonorrheal Arthritis.—Good results are reported by Stellwagen and McCahey following the direct injection of Pregl's solution (sodium salt of hydriodic acid and iodic acid with metallic iodine [0.04 per cent]) into the seminal vesicles in cases of arthritis dependent on inflammation of the vesicles.

Dilatation of Ureter in Female.—In 115 consecutive autopsies on females, ureteral dilatation was found by Carson in thirty-one cases (37 per cent); bilateral, eighteen; right, eleven; left, two. Forty-nine ureters were found dilated in thirty-one females, with the kidney pelvis above dilated in forty-six instances. Ureteral strictures, inflammatory in origin, were found in four cases; bilateral, one. A congenital ureteral stricture on the right side is also reported.

Primary Carcinoma of Bladder Diverticulum.—A highly malignant papillary carcinoma of the bladder is reported by Deming. So far ten cases have been reported with nine deaths. All were males, eight of whom were in the seventh decade. Intermittent hematuria with obstruction and signs of urinary infection are the outspoken symptoms. A majority of the tumors were of a papillary nature.

Unusual Reaction Following Injection of Silver Nitrate into Kidney Pelvis.—Following the instillation of 10 cc. of 2 per cent silver nitrate solution into the left renal pelvis, Ormond's patient had a very severe reaction—pain in the left flank, marked dysuria and frequency, and fever of 100 F. For several months she had attacks of pain in the left side with slight hematuria. *B. coli* disappeared within four months. She has put on some weight, she does not have soreness in the region of the left kidney, or urinary symptoms, the urine does not show pus, blood or albumin, and the phenolsulphonphthalein output is normal.

Enormous Prostatic Adenoma.—The tumor in Douglass's case, in the fresh state, weighed 23¾ ounces (652 Gm.). Hyperplasia of the prostate with infarction leiomyoma of the prostate were found on microscopic examination.

Autolysis of Testis.—Andrews and Oslund report a case of autolysis of both testes in a man, aged 21. The preoperative diagnosis was: cryptorchidism; Froehlich's syndrome; hemorrhoids. At operation the inguinal canal was found to be empty. There was practically no cremaster muscle, and the veins and arteries of the cord were missing. The only cord element that remained was the vas, appearing very nearly of normal size and lying along in the usual location of the cord. This vas stretched the entire length of the canal and disappeared into the scrotum. Traction on the vas brought up the testis out of the scrotum. There was no tunica vaginalis whatever, and the epididymis was quite small. The tunica albuginea was fully developed, shiny, and of normal thickness and consistency. It was, however, completely empty and appeared to contain a few drops of fluid but could be flattened out very much the size and shape of a nickel. Thus it appears that the tunica was about large enough to contain the testicular substance of a 4 to 5 year old child, but the entire contents had disappeared, leaving an empty sac.

Kansas Medical Society Journal, Topeka

27: 215-250 (July) 1927

Interpretation of Bacteriologic Findings in Water Analysis. C. Ritter.—p. 222.

Laryngoscope, St. Louis

37: 473-550 (July) 1927

Injection of Iodized Oil Into Sinuses; Sphenoid Sinuses. A. Lobell, New York.—p. 473.
Plastic Surgery of Nose. R. H. Ivy, Philadelphia.—p. 486.
Pharyngeal Oidiomycosis in Adult. M. A. Zacks, Philadelphia.—p. 498.
Basilar Fracture with Seventh and Eighth Nerve Involvement. W. G. Shemely, Jr., Philadelphia.—p. 502.
Influenza Simulating Sinus Thrombosis. L. Baer, Philadelphia.—p. 508.
Is Exenteration of Labyrinth Justifiable in Absence of Labyrinthine Suppuration? Case. G. W. Mackenzie, Philadelphia.—p. 512.
Method of Tonsillectomy in Children. C. K. Gale, New York.—p. 520.

Medical Journal and Record, New York

126: 1-64 (July 6) 1927

Pyelographic Examination of Kidneys. G. W. Belcher, Cleveland.—p. 1
Science of Unseen. G. B. Lake, Chicago.—p. 10.
Conjugal Syphilis. M. A. Galliot, Paris.—p. 13.
Cancer: XIX. Predisposition. W. Meyer, New York.—p. 14.
Duodenal Dyspepsia. R. Gaultier, Paris.—p. 17.
Kienboch's Disease of Semilunar Bone. H. D. Sonnenschein, New York.—p. 18.
Thomas Addison and Richard Bright, Contemporaries. R. H. Oppenheimer, Atlanta, Ga.—p. 20.
*Value of Quinidine Sulphate in Conditions Other Than Fibrillation of Auricle. L. F. Bishop, New York.—p. 25.
*Heart in Childhood. S. C. Smith, Philadelphia.—p. 28.
Myocardial Insufficiency with Auricular Fibrillation Relieved by Pelvic Lavage for Associated Pyelitis. H. G. Beck, Baltimore.—p. 31.
Important Phases of Essential Hypertension. W. Lintz, New York.—p. 33.
Simplified Test of Cardiac Tolerance. D. Felberbaum and B. Finesilver, New York.—p. 36.
What is Strophanthin? E. E. Cornwall, New York.—p. 39.
Bromide-Chloride Treatment of Epilepsy. A. Ulrich, Zurich, Switzerland.—p. 41.

Value of Quinidine Sulphate.—Bishop regards quinidine, 2 grains (0.13 Gm.), three times a day, as filling the place of a mild cardiac sedative and also as a bitter tonic which is beneficial to the appetite and acts as a possible inhibitor of any obscure malarial tendencies that may exist. It is a good remedy to alternate with digitalis, as it is distinctly antagonistic to some of the symptom producing properties of digitalis. These two drugs, with glyceryl trinitrate and the double salt theobromine sodiosalicylate, constitute a group of drugs of distinct value in dealing with problems arising in cardiologic practice.

Heart in Childhood.—Every child's heart that exhibits a murmur, however seemingly innocent that murmur may be, should in Smith's opinion be examined thoroughly at periodic intervals in order to detect other possible evidences of heart involvement as the years pass.

126: 65-132 (July 20) 1927

Some Findings in Pharmacology. A. D. Bush, Atlanta, Ga.—p. 65.
Conditions That Simulate Epidemic Encephalitis. R. Floyd and J. F. Landon, New York.—p. 68.
Pyelographic Examination of Kidneys. G. W. Belcher, Cleveland.—p. 72.
Cancer: XIX. Predisposition. Heredity Elimination by Selective Breeding. W. Meyer, New York.—p. 78.

Diagnosis of Incipient Pulmonary Tuberculosis in Adult. M. Jacob, Philadelphia.—p. 81.
Alcoholicum et Spiritus Frumenti. D. N. E. Campbell, Atlantic City, N. J.—p. 84.
Truth and Fallacies of Face Peeling and Face Lifting. H. O. Bames, Los Angeles.—p. 86.
Skin Index in Pulmonary Tuberculosis. H. F. Gammons, Booneville, Ark.—p. 87.
Bromide-Chloride Treatment of Epilepsy. A. Ulrich, Zurich, Switzerland.—p. 88.
Transplantation of Ureters. W. E. Lower, Cleveland.—p. 91.
Sperm Examinations Made in Obscure Cases of Sterility. G. L. Moench, New York.—p. 94.
Serochromogenic Reaction of Syphilis. E. De Silvestri, Turin, Italy.—p. 98.
*Antidotes for Mercurochrome and Mercury Poisoning. J. A. Mendelson, Washington, D. C.—p. 100.
Skin Manifestations in Cases of Syphilis Treated with Bismuth. O. L. Mulot, New York.—p. 103.
Venereal Disease Control. W. R. Riddell, Toronto.—p. 104.
Thomas Addison and R. Bright, Contemporaries. R. H. Oppenheimer, Atlanta, Ga.—p. 107.

Antidotes for Mercurochrome and Mercury Poisoning.—Animal experiments have convinced Mendelson that neither sodium thiosulphate nor calcium sulphide can be depended on to act as antidotes for mercurochrome poisoning, and the efficacy of either in mercuric chloride poisoning is doubtful. Certain tissue cells, especially those of the kidney and liver, are destroyed by mercury. The cells thus destroyed cannot be vitalized by the action of other drugs. When enough tissue cells are destroyed by mercury, the animal will die irrespective of the exhibition of sodium thiosulphate or calcium sulphide. Mercurochrome, after its injection into the blood stream, is beyond control by either of the two remedial agents in the doses advocated and used in these experiments.

Michigan State Med. Soc. Journal, Grand Rapids

26: 435-490 (July) 1927

Medical Legislation. J. B. Jackson, Kalamazoo.—p. 435.
Lactic Acid Milk in Infant Feeding. M. O. Kernick, Detroit.—p. 439.
Esophageal Obstruction. B. C. Lockwood and V. G. Hunt, Detroit.—p. 441.
Management of Asthmatic Patient. G. L. Walbott, Detroit.—p. 444.
Fragilitas Ossium. M. S. Rosenblatt, Detroit.—p. 447.
Urology in Children. J. K. Ormond, Detroit.—p. 450.
Cystitis in Women. L. Dretzka, Detroit.—p. 453.
Morphinism and Hysteria in Differential Diagnosis. O. R. Yoder, Kalamazoo.—p. 455.

Northwest Medicine, Seattle

26: 327-376 (July) 1927

Tuberculous Pulmonary Suppuration. E. Holman, San Francisco.—p. 327.
Physical Signs in Chest Simulating Active Pulmonary Tuberculosis. E. A. Montague, Livermore, Calif.—p. 336.
Disinfection of Hands for Surgical Procedures. A. F. Martin, Portland, Ore.—p. 339.
Prenatal Care. A. Holman, Portland, Ore.—p. 347.
Local Anesthesia as Applied to Surgery in Small Hospital, Office and Patient's Home. C. W. Brunkow, Portland, Ore.—p. 351.
Railway Ophthalmology. J. V. Clothier, Pocatello, Ida.—p. 356.
Local Immunization. H. L. Averill, Portland, Ore.—p. 360.
Nonunited Fractures. C. D. Hunter, Tacoma, Wash.—p. 361.
Brain Abscess: Two Cases. I. P. Balabanoff, Tacoma, Wash.—p. 364.

Ohio State Medical Journal, Columbus

23: 543-630 (July) 1927

Gynecologist as Teacher. C. Culbertson, Chicago.—p. 563.
*Significance of Systolic Murmurs. S. S. Berger, Cleveland.—p. 569.
*Tetanus: Treatment. C. H. Reuter, Springfield.—p. 577.
Eczema: Diagnostic Pitfalls. H. J. Parkhurst, Toledo.—p. 583.
Effect of Physical Ills and Defects on Mental Health of Child. H. G. Schumacher, Cleveland.—p. 585.

Significance of Systolic Murmurs.—Berger asserts that the so-called functional or accidental murmur is neither functional nor accidental. In each instance a definite cause can be made out for its presence, namely distortion or rotation of the axis of the heart or both.

Unusual Cases of Tetanus.—Two unusual cases are reported by Reuter, one showing thoracic deformity as a sequela, resulting from the tetanic contractures of the chest musculature, and the other, an infant, aged 15 months, whose initial lesion was an injury to the oral mucosa. Among nine cases treated there were seven recoveries.

Public Health Reports, Washington, D. C.

42: 1749-1796 (July 1) 1927

Court Decisions on Pasteurization. J. A. Tobey, New York.—p. 1756.

42: 1797-1839 (July 8) 1927

Public Health Service Nursing Corps. L. Minnigerode.—p. 1797.

Radiology, St. Paul

9: 1-88 (July) 1927

Chronic Obstruction of Small Intestine. J. T. Case, Battle Creek, Mich.—p. 1.
*Chronic Obstruction of Duodenum. J. C. Bell, J. P. Keith and D. Y. Keith, Louisville, Ky.—p. 15.
*Chronic Duodenal Stasis. E. L. Kellogg and W. A. Kellogg, New York.—p. 23.
Chronic Duodenal Obstruction. J. A. Wolfer, Chicago.—p. 39.
Id. W. H. Holmes, Chicago.—p. 43.
*Physiology of Duodenum. A. C. Ivy, Chicago.—p. 47.
Frequency of Multiple Abdominal Lesions. R. A. Arens and A. R. Bloom, Chicago.—p. 60.
Limit Exposure in Radiography. E. A. Pohle, Ann Arbor, Mich.—p. 65.
*Cholecystography. J. Friedenwald, M. Feldman and F. X. Kearney, Baltimore.—p. 68.
Cardiospasm, with Kinking of Esophagus from Kyphosis. A. B. Moore and P. P. Vinson, Rochester, Minn.—p. 73.
Case of Pneumocephalus. N. J. Nessa, Sioux Falls, S. D.—p. 74.
Simple Method of Cardiometry. I. S. Trostler, Chicago.—p. 75.

Chronic Obstruction of Duodenum.—Bell et al. assert that a relatively large group of patients suffering from chronic gastro-intestinal symptoms show roentgen-ray evidence of partial obstruction of the duodenum, and both medical and surgical measures for relief of this obstruction have resulted in clinical improvement or cure in a large percentage of cases. Abnormal mobility of the ascending colon is not infrequently seen in cases of this type.

Chronic Duodenal Stasis.—Two new varieties of obstruction have been observed by the Kelloggs, the first due to prolapse of the small intestines into the pelvis and compression of the jejunum at the pelvic brim, the second a variety of arterial compression occurring in hyperfixation of the hepatic flexure and caused by pressure of a branch from the anastomotic arch between the right colic and midcolic arteries. Compression of the third portion is largely dependent on the anatomic arrangement of the superior mesenteric artery and its branches. Eighty-two cases of duodenal stasis treated surgically are analyzed.

Physiology of Duodenum.—It is evident from Ivy's review of the physiology of the duodenum that that organ, although not a vital one, is a very important one, and that its dysfunction may lead to serious results.

Cholecystography.—As a result of their experiments on animals, Friedenwald et al. conclude that the visualization of the gallbladder by the oral administration of tetraiodophenolphthalein is unsatisfactory in that in no instance could a gallbladder shadow be obtained. This is entirely due to the high acidity, which alters the form of the dye into an insoluble salt. Even when eliminating the stomach by introducing the dye directly into the small intestine, a gallbladder shadow is not constantly obtained until the gastric secretion is entirely eliminated by tying off the duodenum. In individuals with high gastric acidity, the lessened density of the gallbladder shadows should not necessarily indicate an abnormal finding, but an investigation into the acidity of the gastric contents should be made.

Southern Medical Journal, Birmingham

20: 501-578 (July) 1927

*Natural Immunity to Infection in Natives of Tropics. R. W. Mendelson, New Orleans.—p. 501.
*Importance of Embolic Phenomena in Diagnosis of Coronary Occlusion. L. Hamman, Baltimore.—p. 506.
*Myocardial Damage in Coronary Occlusion. J. W. Scott and J. Harvey, Lexington, Ky.—p. 510.
*Transfusion in Infancy. J. W. Bruce, Louisville, Ky.—p. 515.
Effect of Blood Transfusions in Certain Streptococcic Infections. F. C. Neff, Kansas City, Mo.—p. 519.
Uveitis. W. T. Davis, Washington, D. C.—p. 523.
Id. W. E. Clarke, Washington, D. C.—p. 526.
That Diagnosis "Indigestion." M. L. Graves and G. Graves, Houston, Texas.—p. 532.
New Method for Measuring Intranasal Distance to Sphenoid Sinus. H. Dupuy, New Orleans.—p. 536.
Aneurysms. J. L. Campbell, Atlanta, Ga.—p. 538.

*Sporotrichosis. H. King, Nashville, Tenn.—p. 541.
*Solitary Pyogenic Abscesses (Brodie's) of Long Bones. W. B. Owen, Louisville, Ky.—p. 546.
Diagnosis of Intracranial Lesions. R. N. Greene, Jacksonville, Fla.—p. 550.
Diagnosis of Gallbladder Disease. P. L. Hudson, Atlanta, Ga.—p. 554.
Familial Syphilis. C. C. Dennie, Kansas City, Mo.—p. 558.
Neglected Third Stage and Puerperium. W. C. Hearin, Greenville, S. C.—p. 561.
Diverticula of Bladder. W. H. Toulson, Baltimore.—p. 564.
Preliminary Field Training for Health Officer. W. G. Smillie, New York.—p. 567.

Natural Immunity to Infection in Tropics.—Clinical experience in the tropics leads Mendelson to believe that the newborn infant inherits sufficient general infection immunity to protect it until more specific immunity is developed as the result of a more or less continuous vaccination with infected food and water. Although a material degree of protection is acquired as the result of living in a highly infected environment under natural conditions, degenerative diseases are earlier developed. They are the result of an overtaxation of the body tissues in developing and maintaining general infection immunity.

Diagnosis of Coronary Occlusion.—Of sixteen instances of coronary occlusion seen by Hamman, embolic symptoms occurred in four. In one case the presence of a large pulmonary infarct led to the correct diagnosis; in the other three cases the occurrence of emboli added valuable confirmatory evidence.

Myocardial Injury in Coronary Occlusion.—Scott and Harvey say that the available evidence seems to justify the conclusion that in the great majority of patients with occlusion the electrocardiograph will add valuable confirmatory information and that in many of the patients with symptoms which are mild but suggestive of coronary occlusion there will be found abnormal deflections indicating myocardial disease.

Sporotrichosis with Multiple Lesions.—King's patient had multiple cutaneous and subcutaneous sores on the face, forearms, feet and legs from which the sporothrix was easily obtained in pure culture.

Solitary Bone Abscess.—Owen's patient had an abscess localized in the neck of the femur.

U. S. Veterans' Bureau Med. Bull, Washington, D. C.

3: 651-757 (July) 1927

Late Results of Fractures of Long Bones: World War Cases. J. B. Walker.—p. 651.
*Treatment of Neurosyphilis with Tryparsamide and Mercury. G. W. Schelm.—p. 658.
*Embolism and Thrombosis in Chronic Valvular Heart Disease: Case. K. A. Carroll and J. J. Clark.—p. 671.
Paraphrenia: Relation to Schizophrenia. C. L. Carlisle.—p. 676.
Importance of Individualization in Management of Neurasthenia. J. H. Toomey.—p. 687.
History of Tuberculosis. W. E. Park.—p. 692.
*Spinal Anesthesia in Tuberculous Patients. J. D. Brooks.—p. 700.
*Blood Sedimentation Test in Pulmonary Tuberculosis. H. T. Wrenn.—p. 703.
Local Anesthesia for Tuberculous Patients. A. E. Melincoff.—p. 712.
Case with Pulsus Alternans. H. F. Machlan.—p. 717.
Generalized Tuberculous Adenitis: Case. J. L. McKnight.—p. 725.
Plea for Humanizing Hospitals. T. Pedersen.—p. 740.
Attendant Problem at U. S. Veterans' Hospital, Tucson, Arizona. L. A. Beecroft.—p. 742.
Neuropsychiatric Patient and Occupational Therapy. L. R. Renwick.—p. 745.
Model Program for Ward in State Hospital. M. L. Neff.—p. 746.

Treatment of Neurosyphilis with Tryparsamide and Mercury.—Tryparsamide and mercury used by Schelm in combination had a beneficial effect physically and mentally in more than 50 per cent of 100 cases of neurosyphilis treated. On the laboratory observations, the influence of these drugs is also decidedly favorable, as shown in the case of the spinal fluids, in which the cell count is first to show a diminution; secondly, in more than 20 per cent of the cases the Wassermann reaction was rendered negative; those that were negative at the beginning of treatment remained so, while many were reduced in the intensity of the reaction; thirdly, the globulin was reduced in intensity of the reaction in a large percentage of cases, but few were rendered negative. The colloidal gold test is the last to show the effect of the treatment. In this series, 20 per cent of the curves were rendered normal; in other cases the curve remained stationary or manifested an improvement, only a few showing reverse changes. The blood Wassermann reaction was rendered negative in about one third of the cases of this series. Two or more courses of treatment are necessary before any decided beneficial results are obtained. Several doses of neoarsphenamine given during the rest period appears to act as an adjuvant to the tryparsamide and mercury.

Embolism and Thrombosis in Chronic Valvular Heart Disease.—Carroll and Clark report a case of obstructing embolus in the upper third of the popliteal artery, with the formation of a clot occupying the entire length of the anterior and posterior tibials and peroneal. This definitely prohibited the anastomosing branches from supplying the foot and leg with blood, as the stream was unable at any point to return to the larger vessels for distribution, but was compelled to depend on the collateral arterial circulation, which was unable to carry the burden, with the result that an ascending gangrene of the foot and leg developed.

Spinal Anesthesia in Tuberculous Patients.—Brooks asserts that spinal anesthesia in tuberculous patients is most satisfactory in operations below the diaphragm, does not irritate the respiratory organs, and does not upset digestion. The general postoperative mortality is less than with any other form of anesthesia; nausea and vomiting occur less often than with any other anesthetic. From the surgeon's point of view the relaxation and complete absence of pain is ideal. Untoward results sometimes occur. Transitory headache occurred in 10 per cent of cases.

Blood Sedimentation Test in Pulmonary Tuberculosis.—More than 300 cases have been tested by Wrenn. He regards the blood sedimentation test as a valuable index of the degree of clinical activity in pulmonary tuberculosis. The sedimentation rate seems to parallel the degree of anatomic involvement of the lung. Pulmonary cases associated with tuberculous complications appear to give comparative results, on the basis of classification, with uncomplicated pulmonary cases. By repeated tests at stated intervals the progress of the disease can be graphically represented, and thus the test may serve as a guide to prognosis and treatment.

Virginia Medical Monthly, Richmond

54: 203-270 (July) 1927

Nasal Sinus Operations. J. W. Jervey, Greenville, S. C.—p. 203.
Coalition as Factor in Diagnosis of Pyorrhea Alveolaris. J. B. Williams, Richmond.—p. 206.
Infectious Jaundice. W. B. Blanton, Richmond.—p. 210.
ton, D. C.—p. 214.
Surgical Treatment of Gastric and Duodenal Ulcer. S. H. Watts, University.—p. 220.
Nasal Pathology. W. C. Moomaw, Petersburg.—p. 222.
Circulatory Adaptation to Muscular Exertion. C. C. Haskell, Richmond.—p. 226.
Ectopic Pregnancy. G. H. Reese, Petersburg.—p. 229.
Foreign Bodies in Air and Food Passages. E. G. Gill, Roanoke.—p. 232.
Pneumococcic Peritonitis: Two Cases. H. C. Jones, Petersburg.—p. 233.
Agranulocytic Angina. O. O. Ashworth and E. C. Maphis, Richmond.—p. 237.
Rôle of Surgical Pathologist. R. Beck, Richmond.—p. 239.
Acute Mastoiditis. S. M. Cottrell, Richmond.—p. 243.
Perforated Gastric and Duodenal Ulcers: Twenty-Seven Cases. H. M. Hayter, Roanoke.—p. 247.
Typhoid Thyroiditis: I. A. Bigger and W. E. Scribner, Charlottesville.—p. 249.
Hemorrhage as Complication of Tonsillectomy. W. A. Wells, Washing-
Arsenical Dermatitis Following Use of Neoarsphenamine and Similar Products. E. W. Young, Petersburg.—p. 249.
Retirement. I. S. Stone, Washington, D. C.—p. 250.
Rapid Quantitative Estimation of Sugar in Urines. T. J. F. Mitschke, Danville.—p. 251.

Wisconsin Medical Journal, Milwaukee

26: 339-390 (July) 1927

Chronic Arthritis. J. L. Porter, Evanston, Ill.—p. 339.
O-Iodoxybenzoic Acid Treatment of Chronic Arthritis. A. G. Young Ann Arbor, Mich.—p. 346.
Usefulness of Roentgen Ray in Obstetrics. G. Perry, Kenosha.—p. 351.
Cholecystography by Oral Method. B. R. Kirklin, Rochester, Minn.—p. 356.
Fractures of Leg: Importance of Preventing Backward Bowing. F. C. Heidner, Milwaukee.—p. 358.
Diagnostic Problems. L. M. Warfield, Milwaukee.—p. 360.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

39: 241-284 (June) 1927

Place of Erythema Nodosum in Medicine. G. F. Walker.—p. 241.
Simple Form of Sudorimeter. P. B. Mumford.—p. 256.
Two Cases of Chilblainy Condition of Legs Somewhat Resembling Erythema Induratum. F. P. Weber.—p. 259.

British Journal of Radiology, London

32: 199-238 (June) 1927

Radiographic Survey of Normal Joints. S. J. D. Buxton and R. Knox.—p. 199.
Radiologic Localization of Trephinings and Fractures. A. P. Bertwistle.—p. 213.

British Medical Journal, London

2: 1-46 (July 2) 1927

Acromegaly from Surgical Standpoint. H. Cushing.—p. 1.
*Effects of Radiations on Patients and Radiologists: Protection. H. Rolleston.—p. 9.
Disseminated Sclerosis. D. K. Adams.—p. 13.
*Certain Epinephrine Effects at Menopause: Significance. J. H. Hannan.—p. 14.
*Rupture of Heart. H. S. Chate.—p. 15.
*Hereditary Deformity of Fingers. N. Chilton.—p. 15.
Unrecognized Case of Fracture of Cervical Vertebra. K. V. Trubshaw.—p. 15.
Diagnosis of Gangrene of Small Intestine. I. G. Davies.—p. 16.
*Acute Lobar Pneumonia: Rapid Death. W. A. Young.—p. 16.
Triplets: Eclampsia: Cesarean Section: Survival of Mother and Children. C. H. Roberts.—p. 16.

Radiology and Biophysics.—Rolleston agrees with others that the future of radiology lies in the direction of its biologic applications, and that the science of biologic physics, which presents physiologic phenomena purely from a physical standpoint and thus is the complement of biochemistry, though the partition may be thin, will thus be greatly facilitated.

Epinephrine Effects at Menopause.—Hannan states that the tonus of the sympathetic nervous system of women at the menopause is increased. The increase in tonus of the sympathetic nervous system is responsible for the vasomotor phenomena and, possibly, for some of the other symptoms which make up the menopausal syndrome. The increase in tonus of the sympathetic nervous system at the menopause is caused by the unrestrained action of the suprarenal glands, the internal secretion of the ovaries being deficient or absent. Thyroid extract should not be administered at the menopause, owing to its suprarenal sensitizing action. Chloroform should not be used as an anesthetic in women at the menopause.

Rupture of Heart.—Chate relates the case of a man, aged 71, who died suddenly an hour after drinking a large cup of hot meat extract and a large cup of hot cocoa. At the postmortem examination, he found a rupture, 1 inch long, in the anterior wall of the left ventricle. The muscle was pale, flabby and fibrotic. The stomach was enormously distended with air. He concludes that in sipping the hot liquids the patient had swallowed this air, and the consequent distention of the stomach embarrassed the heart sufficiently to tear it.

Hereditary Deformity of Fingers.—In the case cited by Chilton, the middle and terminal phalanges were shortened. The body of each finger-nail was double, the two parts being separated by almost normal skin, which ran distally over the dorsum of the terminal phalanx and was continuous with the skin covering the tip of the finger. On either side of this median strip of skin, nail tissue appeared, of the normal texture and elasticity. The cuticle was present on each side and overlapped the nails in the usual fashion. The intermediate central part was harder than normal skin and was longitudinally striated; it was, however, quite distinct from the nails. At the distal end there was the usual shallow transverse groove, where the free end of the nail should be. The little finger of the left hand approached the nearest to normal. A grandfather, the father, the brother and sister and a niece exhibited the same deformity.

Rapidly Fatal Pneumonia.—About six hours after the first symptom of pneumonia appeared, Young's patient died. At the postmortem examination both lungs were found in a state of early grey hepatization.

Indian Journal of Medical Research, Calcutta

14: 785-1035 (April) 1927

Prevention of Smallpox in Netherlands, East Indies. C. W. F. Winckel.—p. 837.
*Paris Green as Anopheles Larvicide. B. S. Chalam.—p. 867.
Relation of Virus of Contagious Epithelioma of Fowls to Virus of Variola and Vaccinia: I. C. G. Pandit.—p. 885.
*Experimental Production of Stone in Bladder. R. McCarrison.—p. 895.
Forecasting Cholera Epidemics. A. J. H. Russell and E. R. Sundararajan.—p. 901.
Prevalence and Epidemiology of Hookworm and Other Helminthic Infections in India: IX. A. C. Chandler.—p. 955.
Distribution of Hymenolepis Infections in India. A. C. Chandler.—p. 973.

Paris Green as Anopheles Larvicide.—Chalam regards paris green as being a very valuable weapon for malaria control, and its cheapness, effectiveness even in the presence of thick vegetation, and simplicity of application are assets which are not even nearly approached by other larvicides. Its detracting features are that it has no action whatever on any of the aquatic stages of Culicine mosquitoes or on the eggs and pupae of *Anopheles*.

Experimental Production of Stone in Bladder.—Stone in the bladder has been produced by McCarrison in rats by means of a diet composed of foods in common use by man, the faults of which were (*a*) absence of protein of animal origin; (*b*) relative deficiency of vitamin A; (*c*) excess of earthy phosphates, and (*d*) a possible toxic action on the urinary tract of one ingredient of the diet.

Journal of Tropical Medicine and Hygiene, London

30: 153-164 (June 15) 1927

*South African Nocardiases. A. Pijper and B. D. Pullinger.—p. 153.
Institutes of Tropical Medicine and Microbiology in Moscow. A. G. M. Severn.—p. 156.
*Dermal Leishmanoid with Positive Flagellate Culture from Peripheral Blood. U. N. Brahmachari and A. M. Dutt.—p. 158.

South African Nocardiasis.—A summary is given by Pijper and Pullinger of what is known of South African nocardiases. Three cases of actinomycotic mycetoma are described. In each case a new variety of Nocardia-fungus was found, of which full details as to cultural characters and animal pathogenicity are given. One of them produces bright red grains. Special reference is made to the red pigment of one Nocardia, of the occurrence of fuchsin bodies in various lesions, and of the affinity of Nocardia-fungi for iron.

Dermal Leishmanoid.—The case reported by Brahmachari and Dutt appears to have been one of incompletely cured kala-azar, and was encountered at a stage when visceral leishmaniasis was passing into dermal leishmanoid. It is therefore the first of its kind, as up to now all cases of dermal leishmanoid that have been recorded were found to have developed in patients with kala-azar after a definite period of recovery from visceral leishmaniasis.

Lancet, London

1: 957-1008 (May 7) 1927

Local Epilepsy. G. Holmes.—p. 957.
*Psychogenic Asthma. E. B. Strauss.—p. 962.
*Tuberculosis of Larynx and Artificial Pneumothorax. S. Thomson and R. R. Trail.—p. 963.
*Results of Operations for Gastroduodenal Ulceration. C. A. Pannett.—p. 966.
*Patellar Reflex in Epidemic Encephalitis. J. S. Harris.—p. 968.
*Castor Oil in Acute Appendicitis. G. M. Tanner.—p. 970.
Uterus Didelphys with Pregnancy Alternating in Two Horns. J. L. Davies and C. J. Cellan-Jones.—p. 971.

Psychogenic Asthma.—In one of the cases reported by Strauss, the asthmatic attacks centered round the emotion of fear and the idea of suffocation. In the second case, the attacks occurred at night and were invariably preceded by the following dream: "I find myself by the side of a brook, quite close to my home. The brook overflows and engulfs me. When the water reaches my neck, I awaken into an asthmatic attack."

Tuberculosis of Larynx.—In all of the nine cases seen by Thomson and Trail, tubercle bacilli were present, and the laryngeal lesions were definite and progressive; in five of the cases rapid healing followed the collapse of one lung; in the sixth case, local treatment and the galvanocautery secured cicatrization.

Results of Operations for Gastroduodenal Ulceration.—Twenty-four cases of gastric and thirty-two of duodenal ulcer are reviewed by Pannett. He says that when the results of the operative treatment of medically intractable gastric and duodenal ulcers by a single operator using different methods are compared, it is found that a large proportion of patients are cured and the remainder improved. Partial gastrectomy will cure 80 per cent of such gastric ulcers. It can be carried out in 77 per cent of all cases, and has a mortality of 4.25 per cent. Gastrojejunostomy is accepted as a much inferior method, but sometimes gives remarkable relief in the most unfavorable conditions. Partial duodenectomy will cure 85 per cent of duodenal ulcers which have not responded to medical measures. It can be used in 71 per cent of cases, and has a mortality of 4 per cent. Gastrojejunostomy is a much inferior operation to partial duodenectomy. In the small group of patients in which it was used there were only 55 per cent of cures.

Patellar Reflex in Epidemic Encephalitis.—Eighteen patients suffering from mental symptoms associated with chronic epidemic encephalitis were examined by Harris, and thirteen of them gave knee jerk curves which differed from the normal. Scopolamine, which has been shown to produce marked temporary improvement in these cases, causes the abnormal knee jerk to approximate the normal. Cases of katatonic dementia praecox in which there is well marked rigidity show abnormal knee jerks which closely resemble some of those found in encephalitic parkinsonism, but scopolamine signally fails to exert a beneficial action on these abnormal knee jerks.

Castor Oil in Acute Appendicitis.—The belief that castor oil does, in fact, cause acute appendicitis to take a more violent course than it otherwise would is supported by an analysis made by Tanner of a series of fifty consecutive acute cases of this disease. In eight of the fifty cases, castor oil had been administered. In all of these eight cases the appendix was gangrenous, and in two it was perforated. In six of them pus was also present, and one of the patients died. It is significant that while only one sixth of the fifty patients had had castor oil, this one sixth included half those who developed an appendix abscess.

Quarterly J. Exper. Physiology, London

17: 1-210 (June 23) 1927

*Changes in Organs of Thyroidectomized Sheep and Goats. S. A. Goldberg.—p. 15.
*Effect of Thyroidectomy on Skeletal Muscle in Sheep. E. D. Simpson.—p. 31.
Higher Nervous Activity in Thyroidectomized Sheep and Goat. H. S. Liddell.—p. 41.
Reaction of Human Mixed Saliva. G. J. Rich.—p. 53.
Blood Sugar of Normal Human Subjects After Intravenous Injection of Insulin. A. Bodansky and S. Simpson.—p. 57.
Polyneuritis in Fowls: Its Peripheral Nervous Lesions as Compared with Wallerian Degeneration. P. G. Culley.—p. 65.
Cell Changes in Central Nervous System Under Various Natural and Experimental Conditions: Parathyroid Tetany. J. A. Dye.—p. 71.
Id.: Cretinism in Sheep and Goats. J. A. Dye.—p. 91.
Id.: Functional Activity. J. A. Dye.—p. 107.
Effects of Insulin Injection on Body and Organs of White Rat. P. T. Herring.—p. 119.
Pineal Region of Mammalian Brain: Morphology and Histology in Relation to Function. P. T. Herring.—p. 125.
*Histologic Evidences of Colloid Absorption Directly by Blood Vessels of Pars Anterior of Human Hypophysis? A. T. Rasmussen.—p. 149.
*Distribution of Water and Cholesterol in Blood in Experimental Anemia. M. Bodansky and O. G. Dressler.—p. 157.
Recovery Process After Fatigue of Mammalian Skeletal Muscle in Normal and in Diabetic Animal. T. H. Milroy.—p. 161.
Nervous Connections of Mammalian Spleen: Visceromotor and Other Abdominal Reflexes. J. G. P. Cleland and J. Tait.—p. 179.
Prodestrum and Psudopregnancy. F. H. A. Marshall.—p. 205.

Changes in Organs of Thyroidectomized Animals.—Certain changes are described by Goldberg in the organs of thyroidectomized sheep and goats, namely, paleness of the skeletal muscles; dilatation of the heart with calcification of the aorta and pulmonary artery; nephritis lesions; persistence of the epiphyseal cartilages; myxedema, and hypertrophy of the suprarenals. There seems to be an interrelation between the thyroids and the suprarenals of sheep. The changes in the osseous, muscular and cardiovascular systems are due to an arrest of development resulting from removal of the thyroids.

Effect of Thyroidectomy on Skeletal Muscle.—A study made by Simpson of the skeletal muscle from eleven cretin and five normal sheep shows that early thyroidectomy prevents the normal development of sarcoplasm. The ratio of nucleus to cytoplasm remains more nearly like that in the young animal than that in the control twin. No degeneration of the tissue is evident even in a cretin of 4¼ years, and all the structures of the normal muscle are demonstrable.

Colloid Absorption by Hypophysis.—Histologic examinations made by Rasmussen of about a hundred apparently normal adult human hypophyses in cases of accidental death revealed colloid in the blood vessels of only two specimens. In one of these, from a young pregnant woman, it was abundant and could be seen in both the capsular veins of the anterior lobe, veins emerging from the region of the stalk as well as in the sinusoids proper.

Erythrocyte Volume Increased in Anemia.—In experimental anemia produced by phenylhydrazine and acetylphenylhydrazine, Bodansky and Dressler state that the volume of the average red corpuscle is increased. This change is associated with a disproportionate increase of the water content of the corpuscles. However, the swelling is accompanied by an increase, rather than by a decrease, of the cholesterol content of the corpuscles.

South Africa Medical Association Journal, Cape Town

1: 269-296 (June 11) 1927

Reduction of Maternal Mortality and Morbidity. J. McGibbon.—p. 270.
Pelvic Tumors in Pregnancy and Labor. R. Theron.—p. 277.
Head Injuries. I. W. Brebner.—p. 281.
Pyorrhea. O. Lubke.—p. 285.
Venesection in Acute Pulmonary Edema. P. W. J. Keet.—p. 286.

Japanese Journal of Pharmacology, Kyoto

5: 1-14 (May 20) 1927

Physical and Pharmacologic Influences on Action of Curare: V. Dyes. S. Hori.—p. 1.
Comparison of Lethal Doses of Drugs for Unicellular Organisms and Mammals. Y. Okazaki.—p. 1.
Pharmacologic Investigation of Lobelins. G. Morita.—p. 2.
Pharmacologic Studies of Uranium. K. Ogiu.—p. 3.
Pharmacologic Reaction of Auricle and Ventricle. K. Hayashi.—p. 3.
Effect of Calcium on Action of Vasoconstrictors, Especially Digitalis Preparations. K. Hayashi.—p. 4.
Pharmacologic Control of Methylene Blue Hyperthermia. K. Tokieda.—p. 5.
Effect of Drugs on Function of Reticulo-Endothelial Systems. S. Uchida.—p. 5.
Relation of Rapidity of Administration of Drugs to Their Effectiveness. S. Goto.—p. 6.
Pharmacologic Study of Thebain Derivatives: II. Acetyl-Dihydro-Oxycodeinon. S. F. Jüan.—p. 7.
Pharmacologic Action of Ergotoxin, Especially in Combination with Other Poisons. K. Tokieda.—p. 8.
Action of Epinephrine in Hyperglycemia. T. Kunika.—p. 8.
Effect of Diuretics on Excretion of Poisons. R. Tsurumaki.—p. 9.
Restricting Action of White Chosen Ginseng on Sugar in Blood of Rabbits. J. Kondo.—p. 10.
Action of Hydrogen Sulphide on Various Smooth Muscled Organs. R. Tsurumaki.—p. 11.
Action of Some Poisons on Vessels of Suprarenalectomized Rats. T. Hayama.—p. 12.
Intravenous Infusion of Ringer-Locke's Solution Containing Gum Arabic. J. Toyoshima.—p. 12.
Vasoconstrictor Action of Serums. F. Seto.—p. 13.

Journal of Oriental Medicine, Dairen, S. Manchuria

6: 61-69 (June) 1927

Etiology of Hirschsprung's Disease. K. Ogawa.—p. 61.
Effect of Cold on Animal Body. S. Yamaguchi.—p. 66.
Albumin Metabolism. S. Nishigishi.—p. 67.
Kantiros Treatment of Erysipelas. I. Ogata.—p. 68.
*Carcinoma of Testis. H. Machii.—p. 69.

Carcinoma of Testes with Pulmonary Metastases.—In Machii's case, the tumor was removed surgically. Six months after the operation, the patient died of carcinoma of the lung.

Comptes Rendus de la Société de Biologie, etc., Paris

96: 905-1096 (April 26) 1927. Partial Index

Lesions of the Pancreas in Polyneuritis in Birds. H. Bierry and M. Kollmann.—p. 909.
Secretion of Epinephrine During Anaphylactic Shock. A. Tournade and H. Hermann.—p. 931.
*Transmission of Anaphylaxis by a Substance Contained in Blood of Sensitized Dogs. F. Maignon.—p. 941.
*Permeability of Meningeal Vessels for Bismuth. S. Mutermilch et al. —p. 957.
Morphology of the Herpetic Virus. C. Levaditi and R. Schoen.—p. 959.
*Action of Methenamine on Meningeal Permeability. A. Paulin and G. Desrochers.—p. 962.
*Lysis of Tubercle Bacilli by Tissues. C. Richet, Jr.—p. 965.
Ultrafiltration of Pancreatic Enzymes. E. Lagrange and E. Suarez.—p. 963.
*Quinidine, Epinephrine and Reanimation of the Heart. E. Bardier and A. Stillmunkes.—p. 968.
Glycemia and Action of Dextrose Solution and of Insulin on Trypanosomiasis. G. Cordier.—p. 971.
*Presence of Two Reducing Glucides in the Blood. G. Fontès and L. Thivolle.—p. 994.
The Reducing Glucides in Plasma and Blood Corpuscles. G. Fontès and L. Thivolle.—p. 997.
*The Blastophthoric Action of Arsenic. A. Kostitch and T. Verbitzki.—p. 999.
*Influence of Iodoform on Wassermann Reaction in Rabbits. G. Gjorgjevitch and M. Piévatchévitch.—p. 1006.
*Influence of Iodoform on Wassermann Reaction in Man. G. Gjorgjevitch and M. Piévatchévitch.—p. 1007.
Hyperglycemia from Injections of Nonproteinic Substances. V. Arnovljevitch and X. Chahovitch.—p. 1009.
*The Proteidic Sugar in Hyperglycemia Induced with Peptone. X. Chahovitch and V. Arnovljevitch.—p. 1010.
Production of Calories and Thermal Polypnea. J. Giaja and B. Males.—p. 1013.
The Difference in Action of Ephedrine and Epinephrine. A. Gradinesco. —p. 1027.
*Does Hypoglycemia from Insulin Decrease the Formation of Insulin in the Pancreas? E. Zunz and J. La Barre.—p. 1045.
Loewi's "Humoral Transmission of Cardiac Nerve Action." P. Rylant. —p. 1054.
Blood Cultures in Relapsing Fever in Man. R. Bruynoghe et al.—p. 1071.
*Influence of the Thyroid Gland on Growth of Chironomid Larvae. J. Zavrel.—p. 1087.

Transmission of Anaphylaxis by Injections of a Substance Contained in the Blood of Dogs Sensitized to Horse Serum.—Maignon sensitized dogs by injections of horse serum. Blood withdrawn from these animals was desiccated; the powder was macerated in five volumes of chloroform water and then filtered. The filtrate was precipitated by five volumes of alcohol; the precipitate was washed with ether and desiccated. This powder was treated with eight per thousand sodium chloride solution, and filtered. The liquid obtained was slightly opalescent. About 10 cc. of the liquid was injected into the jugular vein of another series of dogs. Subsequent injection of horse serum provoked an anaphylactic shock in three minutes. The effect was the same when the sensitizing liquid was injected into the peritoneum. In this case, the anaphylactic shock appeared later. Analogous results were obtained when the sensitizing liquid was first mixed with horse serum and then injected into the animals. Further research showed that the active substance of the liquid causes the opalescence.

Passage of Bismuth Through Meningeal Vessels.—In Mutermilch, Delaville and Belin's experiments, rabbits were injected intravenously with methenamine and with a solution of bismuthotartrate of sodium and potassium. Subsequent examination of the cerebrospinal fluid did not reveal the presence of bismuth. Evidently, methenamine does not favor the passage of bismuth through the meninges. Further, rabbits were injected intraspinally with a tyndallized 10 per cent emulsion of Nestlé's meal in sodium chloride solution. The injection caused a mild aseptic meningitis. The animals were given bismuthotartrate of sodium and potassium intravenously. A considerable amount of the bismuth was then found in the cerebrospinal fluid. The author says that injections of the meal have proved to be harmless in man. A detailed statement will be published.

Action of Methenamine on Meningeal Permeability.—Five patients with dementia praecox were each given 2 Gm. of sodium nitrate by the mouth. The amount of the sodium found later in the cerebrospinal fluid was less than 10 mg. Half an hour after ingestion of the sodium, the patients were injected intravenously with 0.5 Gm. of methenamine. The sodium in the cerebrospinal fluid did not increase. Paulin and Desrochers query whether methenamine enhances the permeability of the meninges for antibodies only or whether the dose of the methenamine was insufficient. The authors intend to publish soon the results which they obtained from specific treatment combined with methenamine in several cases of neurosyphilis.

Lysis of Tubercle Bacilli by Tissues.—Richet treated pieces of the liver, spleen and muscle of rabbits and guinea-pigs with human tubercle bacilli. In ten experiments, the bacilli disappeared from the tissues; in four, their number decreased greatly. Tissues mixed with tubercle bacilli were inoculated into guinea-pigs. In two instances, the tissue was boiled; in five, it was raw. Animals treated with the boiled tissue developed tuberculosis; the others remained well. The conclusion is that the lytic action of tissues is due to a thermolabile substance.

Quinidine, Epinephrine and Reanimation of the Heart in Syncope.—Bardier and Stillmunkes point out the fact that administration of quinine or of quinidine previous to chloroform anesthesia may avert cardiac syncope. Animals treated with quinine or with quinidine do not develop syncope from chloroform plus epinephrine. This is explained by the antagonism of the substances. While epinephrine, as a vasoconstrictor, favors the appearance of cardiac fibrillation, quinidine, as a vasodilator, prevents fibrillation. The effect of quinidine proved to be at least ten times more powerful than that of quinine. Animals were injected with quinidine and then exposed to prolonged chloroform anesthesia. Reanimation of the heart was obtained by means of epinephrine, without provoking an epinephrine-chloroform syncope. Quinidine not only creates a condition opposed to the development of cardiac syncope; it favors reanimation by epinephrine in case of syncope.

Presence of Two Reducing Glucides in the Blood.—In Fontès and Thivolle's researches, there was evidence that beside glucose another reducing glucide is present in the blood. It appears to be similar to ether; it increases in the course of assimilation following digestion. Muscular exercise and insulin do not influence its amount in a normal organism. They suggest that this glucide may be a lactacidogen.

The Blastophthoric Action of Arsenic.—Rats were given food mixed with Fowler's solution, for periods of from one to four months. The animals gained in weight; their general condition remained good. Nevertheless, microscopic examination revealed the presence of pronounced lesions in the testes. The degenerative process was identical with that produced by alcohol or by iodine. Contrary to that which is usually taught, Kostitch and Verbitzki have not found any hepatic lesions in the animals. The results tend to confirm the particular sensitiveness of the male genital glands to various poisons.

Influence of Iodoform on the Wassermann Reaction in Blood Serum.—Gjorgjevitch and Piévatchévitch injected twenty rabbits intravenously with an iodoform solution. After from ten to twelve injections, the Wassermann reaction became positive in the blood of the animals, and remained so for a few days. Subcutaneous injections of iodoform did not modify the Wassermann reaction. Traces of free iodoform were not present in the blood of the animals. Eleven patients with a negative Wassermann reaction were injected intravenously with increasing doses (from 0.05 mg. to 0.25 mg.) of iodoform in 3 or 4 cc. of water. The reaction became positive after from ten to twelve injections, totaling 1.5 Gm. of iodoform. The effect of subcutaneous injections was negative. A positive Wassermann reaction may occur in patients with soft chancres, treated for long periods by iodoform.

Proteidic Sugar of the Blood and Hyperglycemia Induced by Peptone.—Chahovitch and Arnovljevitch induced hyperglycemia in rabbits by injecting them with peptone in the peritoneum. Two hours after the injection, the proteidic sugar disappeared from the blood. It reappeared as soon as the hyperglycemia vanished.

Does Hypoglycemia from Insulin Affect Formation of Insulin in the Pancreas?—The observations of Zunz and

La Barre were made on depancreatized dogs. Injections of blood from normal dogs prevented the appearance of glycemia in these animals. Injections of blood from dogs with hypoglycemia induced by insulin, did not avert hyperglycemia in the depancreatized dogs. This fact tends to prove that in hypoglycemia from insulin, the insulin in the blood of the pancreatic veins decreases greatly. The results were the same when the depancreatized dogs were deprived also of the suprarenal capsules. Obviously a compensatory hyperepinephrinemia could not have intervened in the results of the experiments.

Influence of the Thyroid Gland on Growth of Chironomid Larvae.—Zavrel noted that chironomid larvae fed on thyroid gland grew more rapidly than the controls. He has not yet been able to establish whether administration of thyroid accelerates metamorphosis also.

Le Sang, Paris

1: 1-96, 1927

*Action of Rays on the Lymphoid Organs. J. Jolly.—p. 1.
*The Anticoagulant Substance in the Tissues. M. Doyon.—p. 13.
*Study of Angioma. P. Emile-Weil.—p. 35.

Action of Rays on Lymphoid Organs.—Jolly studied the lesions caused in lymphoid tissues by short wavelength rays other than roentgen or gamma rays. Changes produced by the ultraviolet rays have heretofore been noted only in the skin and inaccessible membranes, such as the cornea and the lingual mucosa. Owing to absorption of the ultraviolet rays by the skin, the lymphoid organs appeared unaffected by the rays. In his experiments, Jolly exposed the inguinal glands and the thymus of animals to rays, after having incised the corresponding part of the skin. Under ultraviolet rays, the lesions in the thymus were limited to the cortical portion of the gland, directly exposed to the rays. There was pyknosis and nuclear necrosis in the thymocytes. The connective tissue remained intact. In the inguinal glands, the lesions were analogous to those in the thymus. The glandular follicles, especially the germinal centers, were involved. The character of the lesions and the latency period were the same as when roentgen rays were employed. In another set of experiments, rats were injected with erythrosin and then the thymus was exposed to sunlight. The animals were killed from twelve to twenty-four hours after the exposure. The lesions in the gland were the same as after exposure to ultraviolet rays. Changes in the thymus did not occur from exposure to sunlight without the previous injection, or from injection without exposure to sunlight. Chemical changes in the body fluids, caused by the fluorescent substance, were responsible for the lesions. Evidently, rays of short wavelength exert, besides a direct action, also a secondary toxic action, the character of which is yet unknown.

Researches on the Anticoagulant Substance of the Blood.—The blood owes its fluidity to an anticoagulant substance elaborated in the organism. In normal blood, this substance is hardly measurable. After injection of peptone, the amount of the anticoagulant substance increases considerably. In certain animals and probably also in man, the substance appears to be secreted chiefly by the liver; on removal of this organ, the peptone ceases to act. Other organs supplement the secretion to a certain extent. The activity of the anticoagulant substance in the organs is masked by the presence of coagulant substances. The anticoagulant substance originates in the nuclear bodies of the cells. It may appear at the stage of nucleoproteid, nuclein, nucleic acid or nucleotid. Doyon details the chemical properties of this anticoagulant substance. About 0.005 Gm. of the latter prevented coagulation of 250 Gm. of blood for from thirty to forty minutes.

Pathogenesis of Angioma.—Emile-Weil's experience includes fourteen cases of angioma. Ten of the patients were women. In eleven cases the lesion was congenital. All cases were sporadic; none was familial. Seven of the patients presented a lesion of the liver associated with a hemorrhagic condition. In six, hemogenia coincided with changes in the capillaries. Hepatic and hemogenic disturbances were absent only in one case, in a child, aged 3. This is explained by the fact that the hemogenia usually develops at the time of puberty. There appears to be an analogy between hepatic diseases in which ruby-colored spots and enlarged capillaries develop in adults, and Osler's disease, characterized by an hereditary hemorrhagic angiomatosis. Another analogy is found in congenital angioma. The conclusion is that angioma is not merely a local lesion; its development is connected with hepatic insufficiency. The co-existence of changes in the blood and in the capillaries is the result of a pathologic process in the embryonal islands of Wolff and Pander. Capillary angiomas of the neck, frequent in the new-born, usually disappear spontaneously within the first year of life. In the other cases, hepatic and splenic extracts, also subcutaneous injections of blood, have been tried without success.

Schweizerische medizinische Wochenschrift, Basel

57: 609-632 (June 25) 1927

*Umbilical Sepsis. A. Werthemann.—p. 609.
*Estimation of Specific Dynamic Action. A. Werner.—p. 612.
Epidemic Meningitis. E. Schinz.—p. 621.
*Pathogenesis of Ulcer of the Stomach. W. Sternberg.—p. 623.
Alleged Scurvy-Producing Action of Irradiated Milk. E. Wieland.—p. 625.
The Adnexa and Retroflexion of the Uterus. H. Mentha.—p. 625.

Umbilical Sepsis.—Werthemann deals with atypical cases. The clinical onset may be late and slow: in one of his cases it was in the second month of life. The navel region may appear normal. Multiple abscesses of the liver, lungs or skin or meningitis are the most frequent sequelae of umbilical infection in such infants.

Estimation of Specific Dynamic Action.—For a standard meal, Werner recommends the administration of 0.5 or 1 Gm. of aleuronat boiled in 300 cc. of water and flavored with a soup extract. The average increase in metabolism was 24 per cent after administration of 0.5 Gm. of aleuronat per kilogram of body weight. The peak was obtained in one hour in 30 per cent of his cases, in two hours in 70 per cent. The respiratory quotient was lowered by 0.1, as a rule. The frequency of the pulse increased parallel with the specific dynamic action.

Pathogenesis of Ulcer of the Stomach.—Sternberg analyzes the site of gastric ulcers, their asymmetry and the usual direction of the perforation. The latter occurs as a rule in a direction opposite to the axial stream of the stomach. He points to parallels with geophysics—especially with the causes of erosions of river banks.

Pediatria, Naples

35: 689-744 (July 1) 1927

Amebic Dysentery in Children. M. Gerbasi.—p. 689.
Inflammations of Epiphyses. A. F. Canelli.—p. 703.
Enuresis. C. Gallo.—p. 710.
Absence of Oblique Abdominal Muscles. D. Blasi.—p. 720.
Spastic Syndromes and Aphasia in Diphtheria. D. Angarano.—p. 725.

Policlinico, Rome

34: 919-954 (June 27) 1927

Prognosis in Secondary Dextrocardia from Tuberculosis of the Lungs. M. Faberi.—p. 919.
Contusion of a Hernia and Pseudo-Incarceration. G. Frattin.—p. 924.
Santonin and Chenopodium. D. del Duca.—p. 925.
Interdigestive "Sympathies." T. Cecchetelli.—p. 926.

34: 955-990 (July 4) 1927

Treatment of Postoperative Anemia. E. Polacco.—p. 955.
Treatment of Epidemic Encephalitis. A. Bettòlo.—p. 959.
Fetal Infection. B. Coglievina.—p. 962.

34: 991-1026 (July 11) 1927

School of Malariology. V. Ascoli.—p. 991.
Spinal Paralysis After Ovariectomy. C. Leo.—p. 994.
Intracardiac Injections. C. Valenti.—p. 997.
*Pleural Eclampsia After Exploratory Puncture. M. Sbrozzi.—p. 1000.

Pleural Eclampsia After Exploratory Puncture.—Sbrozzi made an exploratory puncture in a case of empyema in a young, nervous and excited girl. After this he gave her a few subcutaneous injections of a 0.5 per cent solution of procaine hydrochloride for local anesthesia. Before he could proceed with the intervention, the patient had an epileptiform seizure, followed by several others at intervals of a few seconds, and died. He believes that this is an instance of true pleural eclampsia, not due to air embolism.

34: 325-388 (July 1) 1927. Medical Section

Diverticula of the Duodenum. G. Sabatini.—p. 325.
*Combined Blood Sugar. C. Toscano.—p. 354.
The Bacteriophage. A. Alessandrini.—p. 365.

Combined Blood Sugar.—Toscano made his experiments on starving dogs. Injection of epinephrine induced regularly a lowering of the amount of combined blood sugar (sugar which is liberated by hydrolysis of the serum). Injection of insulin at first lowered the amounts of both free and combined sugar; an increase in the latter sugar followed later.

Riforma Medica, Naples

43: 601-624 (June 27) 1927

Syphilis in Llamas. R. Stanziale.—p. 601.
Micrococcus Melitensis and Bacillus Abortus Septicemia. G. Lonero. —p. 603.
*Abderhalden's Reaction and Skin Tests. G. Melli.—p. 605.
Phrenicotomy and Phrenicectomy. G. Ricciuti.—p. 611.
*Urinary Disturbances Due to Eating Hedgehog's Flesh. G. De Roma. —p. 621.

Abderhalden's Reaction and Skin Tests.—The serum from all of Melli's patients who were hypersensitive to pollens, gave a positive Abderhalden reaction, which was to a large extent specific. A negative enzyme reaction was obtained, as expected, with the serums from two subjects who were hypersensitive to quinine and morphine, respectively.

Urinary Disturbances Due to Hedgehog's Flesh.—Grave and painful disturbances of the urinary tract were observed by de Roma in some of the people who ate the flesh of European hedgehogs *(Erinaceus europaeus)*. Not every hedgehog is poisonous and not every one of those who ate the meat was affected. He believes that the poisoning not only resembles the effects of cantharides, but that it may be identical with it. He quotes Brehm and Cantani in support of the fact that the hedgehog eats cantharides without being affected by them.

Anales Soc. Mex. de Oftalmología, etc., Mexico City

6: 25-48 (Feb.) 1927

*Treatment of Keratoconus. A. F. Alonso.—p. 25.

New Treatment for Keratoconus.—In a boy, aged 14, keratoconus had acquired considerable development and almost destroyed vision. Alonso tried direct corneal removal of the lesion and covered the operative wound with a conjunctival flap. The result was highly satisfactory in view of the existing disability.

Archivos Chilenos de Pediatría, Santiago

4: 501-551 (Jan.-April) 1927

Insulin in Infantile Diabetes. G. Moraga Fuenzalida.—p. 503.
Vaccine Therapy in Acidosis. E. Cienfuegos.—p. 511.
Pulmonary Micosis. O. Schwarzenberg Th.—p. 514.
*Cecal Tuberculosis in Children. A. Alonso Vial.—p. 516.
Serum Therapy of Anthrax. E. Cienfuegos.—p. 523.
Caseous Pneumonia in an Infant. F. Eggers.—p. 529.
*Tuberculin Tests. J. Schwarzenberg L. and A. Steeger.—p. 535.

Cecal Tuberculosis in Children.—Of 600 children admitted to the surgical department of the Arriarán Hospital in 1926, Alonso found tuberculosis of the cecum in twelve. The majority lived in a tuberculous environment, and the disease was usually secondary to a pulmonary focus. Only in one case with caseous and miliary tuberculosis did obstruction develop. The symptoms are usually uncertain, suggesting appendicitis, and the patients are often operated on under such a diagnosis. Fluoroscopy is very useful in diagnosis. The temperature is rather low, it was below normal in three of the twelve cases. The prognosis depends on the pulmonary condition. "No one dies of tuberculosis of the cecum."

Skin and Percutaneous Tests with Tuberculin.—In most cases, Schwarzenberg and Steeger assert, cutaneous and percutaneous tests are sufficient for diagnosis. The intradermal and subcutaneous tests are not only unnecessary, but harder to carry out. Of ninety tuberculous children, in only fourteen, i. e., 15.5 per cent, was resort to the Mantoux test necessary. Moro's ointment proved best in percutaneous tests, failing in only 30 per cent of the cases in which the Pirquet test proved positive. This ointment has the advantage that it can be used later to control the therapeutic result and readings can be made even six days afterward. With Pirquet's test, incisions give 17 per cent more positive results than does scarification, but the latter is simpler. A single reaction is unreliable. For prognostic purposes, however, a pale Pirquet reaction (white infiltration with no reddening) usually means cachexia or acute pulmonary tuberculosis (phthisis florida). Dilutions as high as 1:10 or 1:100 may prove dangerous. In contrast to textbook statements, only 50 per cent of forty-two cases of tuberculous meningitis, miliary tuberculosis and exudative phthisis were found negative to tuberculin. Any favorable change in tuberculosis cases untreated with tuberculin synchronizes with a gradual increase in the sensitiveness to tuberculin.

Archivos Lat.-Amer. de Pediatría, Buenos Aires

21: 255-324 (April) 1927

*Ascites with Cirrhosis of the Liver. M. Acuña and A. Casaubón.—p. 255.
Anemias of Infancy. F. Schweizer.—p. 275.
Emphysema in Meningitis. J. C. Bertrand and A. Paolucci.—p. 294.
Purulent Pleurisy. A. Segers and R. A. Rivarola.—p. 299.
*Abscess of the Liver. V. Raggio Acosta y Lara.—p. 302.
Nephritic Uremia. E. Portú Pereyra.—p. 305.

Spontaneous Cure of Ascites.—A child, aged 10 years, was seen by Acuña and Casaubón when suffering from a hypertrophic cirrhosis with recurrent ascites. Various methods of treatment, including puncture, failed to change the course of the disease. The patient, however, recovered spontaneously in about two and one half years, fully eighteen months after receiving the last treatment.

Pneumococcic Abscess of the Liver Following Otitis.—In a child, aged 2½ years, with an hepatic abscess, the presence of a suppurative acute otitis suggested to Raggio a possible etiologic connection. In the pus obtained by puncture from the liver, pneumococci were found. The child recovered after operation.

Archivos de Medicina Cirugía y Espec., Madrid

26: 773-788 (June 25) 1927

*Barbital Sodium Exanthemas. B. Rodríquez Arias.—p. 773.
*Malaria and General Paralysis. B. Rodríquez Arias.—p. 774.
Treatment of Psychoneuroses. E. Mira.—p. 775.
*Bacteriophage. P. Domingo and J. Vidal.—p. 779.
Antityphoid Vaccination by Mouth. P. Domingo et al.—p. 781.
Atypical Epidemic Encephalitis. J. Cuatrecasas.—p. 782.
Clinical Value of Hill-Flack Sign. J. Cuatrecasas and J. Berini.—p. 784.

Erythrodermias Caused by Barbital.—Rodríguez Arias has seen general or local erythrodermias caused by barbital sodium in several patients with epilepsy. If the medicine is not stopped, the resulting cachectic exfoliation may prove worse than the primary disease.

Malaria and General Paralysis.—In two cases seen by Rodríguez Arias, malarial infection contracted by the patient when suffering from a latent, overlooked syphilis did not prevent the development of general paralysis.

Increased Activity of Bacteriophage in Syphilis.—From Domingo and Vidal's experience, it may be concluded that the keeping of the bacteriophage in emulsions of dead bacilli with bile increases its activity and virulence. Old cultures, if kept dissolved, render bacteriophage as active as that of young cultures.

Boletín de la Soc. de Cirugía de Chile, Santiago

5: 31-43 (April 20) 1927

Open Fracture of the Leg Bones. A. Constant.—p. 31.
*Forceps in the Inlet. V. Gacitúa G.—p. 37.
*Spontaneous Torsion of Normal Adnexa. J. Wood.—p. 42.

Uses of High Forceps.—In some cases of unengaged head presentation with ruptured membranes, live fetus and normal pelvis, forceps may prove superior to internal version, cesarean section or basiotripsy. The maneuver consists in the manual rotation of the head until the occiput is at the pubic symphysis. Using both hands, an assistant then holds the head against the inlet through the abdominal wall. The application of the forceps comes next. The method has its contraindications, but in six cases it was proved of use. In the discussion, Monckeberg pointed out the dangers of this brilliant operation in inexperienced hands.

Spontaneous Torsion of Normal Adnexa.—In two cases seen by Wood in a period of four years, operation brought to light an unexpected adnexal torsion. This condition is extremely uncommon. In one case, the preoperative diagnosis had been appendicular abscess and in the other ovarian cyst with torsion of the pedicle.

Boletín de la Soc. de Obstet. y Ginecol., Buenos Aires

6: 37-66 (May 10) 1927

Volvulus of the Fallopian Tube. E. Nicholson.—p. 39.
Recurrence of Hydatiform Mole. A. J. Guiroy.—p. 45.
*Diagnosis of Fetal Suffering. R. Schwarcz.—p. 51.

Guides in the Diagnosis of Fetal Suffering.—In 70 per cent of obstetric cases, Schwarcz says, the indications for surgical termination of pregnancy are based on the suffering of the fetus. However, the different clinics have different standards to judge such suffering. A uniform standard should be agreed on to determine the proper time for surgical interference. Auscultatory technic should be improved and the results should be recorded on the patient's chart. Any change in the beats of the fetal heart must be considered pathologic and, during the dilatation period, ominous. The discharge of meconium does not by itself justify operative termination of labor. The presence of a funicular murmur is also inconclusive. Any premature respiratory movement—and the intrauterine cry is nothing else—requires prompt action.

Revista Médica Latino-Americana, Buenos Aires

12: 1121-1307 (May) 1927

*Suprapubic Incision. R. Araya and A. G. Neumann.—p. 1121.
Dystonia Musculorum Deformans. J. C. Navarro and A. S. Marotta.—p. 1144.
Pneumothorax Pleurisy. A. Sarno.—p. 1158.
Heroin in Hemoptysis. A. Nario.—p. 1166.
*Hepatic Insufficiency. C. Cardini.—p. 1179.
Tuberculosis of the Eye. J. Lijó Pavia.—p. 1183. C'td.

The Suprabubic Arciform Incision in Gynecology.—The illustrations in Araya and Neumann's paper show the technic of this new suprapubic incision. Among the advantages claimed for it are almost universal applicability in gynecologic operations, prevention of postoperative hernias, easier peritoneal drainage, better cosmetic results and shorter convalescence.

Insulin in Hepatic Insufficiency.—Cardini confirms the generally favorable action of insulin in cases complicated with hepatic insufficiency. This medication is purely symptomatic.

Revista Médica del Rosario, Rosario de Santa Fe

17: 207-266 (May) 1927

*Functions of the Spleen. C. Viale.—p. 207.
Cancer of the Colon. L. O. Zeno.—p. 213.
Abnormality of the Hyoid Bone. C. Carones.—p. 230.

The Spleen as Regulator of Red and White Blood Cells.—Viale quotes experiments to prove that the spleen not only controls the number of erythrocytes, as suggested by Barcroft, but also that of leukocytes. Splenectomized dogs die much more quickly after being deprived of the suprarenals. In three suprarenalectomized dogs, the postprandial leukocytosis was prompt and high grade.

Revista Méd.-Quirúrgica de los Hospitales, Bogota

2: 405-456 (Feb.) 1927

*Sequelae of Cesarean Section. R. Ucros.—p. 405.
Urea Measurements in Bogota. A. M. Barriga Villalba.—p. 410.
Hookworm Disease in Colombia. D. B. Wilson.—p. 412.
Internal Drainage of the Common Bile Duct. A. Garcia Maldonado.—p. 426.
Acute Leprosy. J. Fajardo Escobar.—p. 428. C'td.
Ossification of the Hand in Bogota. G. Esguerra Gomez.—p. 444.
Poisoning by Snake Venom. H. Matallana L.—p. 450.

Lithopedion Escaped Through a Cesarean Scar.—Among late complications of cesarean section there is the possibility of rupture of the uterus in the course of a subsequent pregnancy, with the escape of the fetus into the pelvic or abdominal cavity and the formation of a lithopedion. This happened in Ucros' case. The lithopedion was found four years after the primary section, when the symptoms required operation. From the roentgenogram, the fetus was at least 8 months old.

Revista Mexicana de Biología, Mexico City

7: 55-77 (May-June) 1927

*Mexican Onchocerciasis. I. Ochoterena.—p. 55.
Literature on Pinto. A. E. Reyes.—p. 69.
Air Demand in High Altitudes. J. J. Izquierdo.—p. 73.

Onchocerciasis in Mexico.—The illustrations published by Ochoterena show the characteristics of the Mexican Onchocerca as well as the tumors that it causes. All the traits of this nematode point to its belonging to the filaridae, being a variety of the volvulus species. Its characteristics do not justify the creation of a new species, as they seem to vary according to the location of the growth, the geographical site and the clinical picture of the disease.

Sciencia Médica, Rio de Janeiro

5: 225-296 (May 31) 1927

Plasmodium Vivax and Plasmodium Falciparum. J. Aben-Athar.—p. 225.
Treatment of Dysenteries. H. Maciel.—p. 235. C'td.
*Roaches and Intestinal Parasites. J. Schwenck.—p. 251.

Roaches in the Spread of Ascaris and Trichuris Infestations.—Several experiments by Schwenck as well as clinical experience proved that roaches frequently become infested by various intestinal parasites. In their turn, they may serve to infect infants by their excreta because of the habit of children of picking things up and putting them into their mouths. It is suggestive that among 178 cases of ascaris infestation discovered by 737 fecal examinations in hospitals, most were in children and women.

Semana Médica, Buenos Aires

34: 1137-1196 (May 12) 1927. Partial Index

Treatment of Club Foot. S. Satanowsky.—p. 1137.
Classification of Diabetes. P. Escudero.—p. 1152.
Overgrowth of the Lip. R. Finochietto.—p. 1159.
*Suprarenals and Arterial Pressure. A. Biasotti.—p. 1163.
Arthroplasty in the Knee. G. Bosch Arana.—p. 1184.

Influence of the Suprarenals on Blood Pressure.—Biasotti summarizes the literature and describes exhaustively his own experiments. The removal of one suprarenal does not usually change blood pressure. Bilateral suprarenalectomy causes a progressive drop of arterial pressure, if death occurs in from forty to sixty hours. If death delays, the low pressure becomes almost stabilized. Dogs deprived of one gland and the medullary substance of the other present first hypotension, which disappears gradually after twenty or thirty days.

Archiv. für exp. Pathologie u. Pharmakol., Leipzig

123: 1-128 (June) 1927

*Crenation of Erythrocytes. L. Loeffler.—p. 1.
Sulphur of the Blood and of Insulin. J. Kühnau.—p. 24.
*Antagonist of Insulin in the Blood After Pancreatectomy. H. Häusler and O. Loewi.—p. 56.
*Action of Glycemin, the Antagonist of Insulin. S. Dietrich et al.—p. 63.
*Secretion of Insulin After Injection of Dextrose. H. Häusler and O. Loewi.—p. 72.
*Secretion of Insulin and Glycemin After Administration of Dextrose. H. Häusler and O. Loewi.—p. 88.
*Hormonal Phenomena After Administration of Dextrose to Fasting Animal. H. Häusler and O. Loewi.—p. 120.

Crenation of Erythrocytes.—Loeffler confirms Stricker's observation on the influence of carbon dioxide on crenation of erythrocytes. Removal of the gas by air or hydrogen produced crenation, which was reversible. With an excess of carbon dioxide, the erythrocytes assumed a bell shape.

Hormonal Phenomena After Administration of Dextrose.—Häusler and Loewi with their collaborators publish the protocols and a discussion of their experiments. They estimate the amount of insulin and of its antagonist ("glycemin") in the blood plasma by determining the amount of dextrose absorbed by normal human erythrocytes suspended in such a plasma. The antagonist of insulin is present in the dialysate from plasma, and therefore both hormones may be estimated separately. The reflex secretion of glycemin probably accounts for the alimentary hyperglycemia, which may be prevented by an injection of ergotamin. The abnormally high alimentary glycemia in previously starved animals is due to an insufficient secretion of insulin, not to an increased secretion of glycemin. It is not impossible that some cases of diabetes are due to overproduction of glycemin.

Archiv f. d. ges. Physiologie, etc., Berlin

217: 1-150 (July 2) 1927

*Threshold of Internal Stimulus of the Heart. H. Zwaardemaker.—p. 1.
Refractory Phase of Muscles Under Influence of Alcohol. K. Unrath.—p. 11.
Increased Excitability of Muscles. A. Judin.—p. 17.
Mineral Metabolism After Administration of Calcium. W. Krane.—p. 24.
Temperature Sense. H. Hahn et al.—p. 36.
Action Space. J. von Uexküll and H. Roesen.—p. 72.
*Alimentary Dystrophy. E. Abderhalden.—p. 88.
Vestibular Apparatus in Pigeons. C. E. Benjamins and E. Huizinga.—p. 105.
Permeability and Respiration of Goose Erythrocytes. E. Raab.—p. 124.
Action of Atropine on Antidromic Vasodilatation. J. Mosonyi.—p. 131.
Lactic Acid Formation in the Blood in Beginning Disappearance of Dextrose. H. Häusler.—p. 134.
Nervous Regulation of Water Metabolism. A. Hoffmann and E. Wertheimer.—p. 138.
Accelerans Nerves. H. L. Otto.—p. 147.

Threshold of Internal Stimulus of the Heart.—Zwaardemaker made a quantitative study of the minimum of radioactivity which is necessary to resuscitate a frog's heart perfused with a potassium-free fluid. The heart beat is resumed when a gram of fresh heart tissue contains either 2 mg. of potassium or such an amount of any other substance as would exert a corresponding radioactivity. The "threshold" for the action of radioactive substances applied from without is more difficult to determine. It may be estimated at 0.8 mg. of radium.

Alimentary Dystrophy.—Abderhalden fed pigeons exclusively on polished rice. Addition of 0.1 Gm. of dried yeast daily kept the birds for months in good general condition. Only spermatogenesis was impaired. Pigeons whose diet of polished rice was supplemented daily by 0.2 Gm. of dried yeast gained in weight and remained apparently healthy for as long as two years. Addition of sodium chloride and especially of from 0.2 to 0.4 Gm. of diiodotyrosin caused rapid decrease in weight and death without convulsions. On a diet consisting exclusively of raw meat and continued for five months, the pigeons' feathers became brittle and fell out. At this period polished rice was substituted for the raw meat, and within a week the feathers began to grow. Later, the growth ceased. Cooked meat had a better curative effect than raw meat in pigeons with beriberi.

Biochemische Zeitschrift, Berlin

186: 3-336 (June 21) 1927

*Specific Dynamic Action and Carbohydrate Metabolism. I. Abelin and B. Kobori.—p. 3.
Microchemical Technic. L. Pincussen.—p. 28.
Action of Irradiation on Fat Metabolism. A. Kultjugin.—p. 36.
Lactic Acid Formation in the Skin. J. Wohlgemuth.—p. 43.
Carbon-Nitrogen Ratios and Amino-Acids. A. Bickel and I. Remesow.—p. 54.
Action of Active Ferric Oxide on Carbon Nitrogen Ratios. I. Remesow.—p. 64.
*Change in Action of Poisons by Surface Active Substances. L. Asher and N. Scheinfinkel.—p. 87.
*Prevention of Specific Diuresis by Intraperitoneal Injection of Water. G. M. Curtis.—p. 95.
*Idem.: With Denervated Kidneys. G. M. Curtis and N. F. Shambaugh.—p. 112.
*Prevention of Diuresis by Anesthesia of Interbrain. H. Molitor and E. P. Pick.—p. 130.
Arginine Content of Proteins and of Amyloid. O. Fürth and O. Deutschberger.—p. 139.
Distribution of Oxygen Among Organs. E. S. London and L. M. Rabinkowa.—p. 155.
Microdetermination of Urea Without Urease. W. Laubender.—p. 158.
Solubility and Distribution of Chloroform in the Blood. H. Winterstein and E. Hirschberg.—p. 172.
Prospects of Active Iron Compounds. A. Bickel and C. van Eweyk.—p. 178.
Irradiation of Serum Albumin. M. Spiegel-Adolf.—p. 181.
Action of Arsenic on Hemolysis. L. Löhner.—p. 194.
Ultraviolet Absorption Spectrum of Porphyrins. W. Hausmann and O. Krumpel.—p. 203.
*Climate of High Altitudes. T. Brehme and P. György.—p. 213.
Differences Between Pigeons and Domestic Fowls in Regard to Vitamin B. A. Scheunert and M. Schieblich.—p. 222.
Vitamin Content of Beer. A. Scheunert and M. Schieblich.—p. 229.
Volatile Fatty Acids in Sour Fodder. C. Brahm.—p. 232.
*Rôle of the Pancreas in Toxic Glycemias. A. Bornstein and R. D. Loewenberg.—p. 243.
*Sex and the Action of Alcohol. E. Abderhalden and E. Wertheimer.—p. 252.
*Antirachitic Factor in Grass Grown in the Dark. W. Völtz and W. Kirsch.—p. 255.
Technic of Geppert and Zuntz' Metabolism Apparatus. J. Paechtner.—p. 264.
Sparteine. R. Wolffenstein and J. Reitmann.—p. 269.
Insensible Perspiration. F. G. Benedict and C. G. Benedict.—p. 278.
Action of Carbohydrate-Phosphoric Acid Esters on Dextrose. P. Mayer.—p. 313.
Phytochemical Reduction in Stages. G. Nagelschmidt.—p. 317.
Precipitation of Diamino-Acids by Mercuric Acetate and Sodium Carbonate. G. Nagelschmidt.—p. 322.
Ketone-Aldehydmutase in Various Grains. L. Klar.—p. 327.
Dismutation of Methylgloxal by Bacillus Delbrücki. C. Neuberg and E. Simon.—p. 331.

Specific Dynamic Action and Carbohydrate Metabolism.—In support of the theory that the specific dynamic action is due to waste of energy in production of carbohydrates from other food, Abelin and Kobori injected rats with considerable amounts of phlorhizin. After several injections—probably when the glycogen reserves were depleted—the animals reacted to administration of meat with a much greater increase in metabolism than before. He suggests the substitution of the term "intermediary chemical foodstuff work" (intermediäre chemische Nährstoffarbeit) for the term "specific dynamic action."

Change in Action of Poisons by Surface-Active Substances.—Asher and Scheinfinkel investigated the question whether other surface-active substances beside the cholates are able to reverse the action of atropine and ergotamine on the frog's heart. They had good results with caprylic alcohol and a few other substances.

Prevention of Specific Diuresis by Intraperitoneal Injection of Water.—Curtis continued his investigations on the mechanism of diuresis induced by a derivative of theobromine. Intraperitoneal injection of 100 cc. of distilled water at first prevented diuresis in rabbits. When the intraperitoneal fluid became isotonic with the blood, an injection of the specific diuretic proved effective. The deviation of electrolytes, especially of chlorides, from the blood into the abdominal cavity apparently prevents the action of the diuretic.

Prevention of Specific Diuresis by Intraperitoneal Injection of Water in Rabbits with Denervated Kidneys.—To refute the possibility that intraperitoneal injection of distilled water inhibits diuresis by reflex action on the kidneys, Curtis and Shambaugh denervated the kidneys of the rabbits before the injection. The results were the same as those mentioned in the previous abstract. Besides this, the injection of water into the abdominal cavity inhibited the diuresis which is the rule after denervation of the kidneys.

Prevention of Diuretic Action by Anesthesia of the Interbrain.—Comparatively small doses of chloretone were found by Molitor and Pick to inhibit completely the diuretic action of caffeine or theobromine in rabbits. Small doses of phenobarbital inhibit the usual diuresis following administration of water. In contradistinction to the inhibitory effect of these narcotics, acting on the diencephalon, substances which act on the cortex, such as paraldehyde, promote caffeine diuresis by removing inhibitory impulses descending to the interbrain. Simultaneous administration of paraldehyde and chloretone inhibits caffeine diuresis completely. They conclude that the action of even the strongest diuretics depends on the condition of the diuresis center in the medial hypothalamic region.

Climate of High Altitudes.—Brehme and György found on themselves an acidotic shifting of the blood reaction in the first hour after ascending by railway to altitudes of 2,400 and 3,400 meters. The epinephrine reaction was increased, especially in the higher altitude.

Rôle of the Pancreas in Toxic Glycemias.—From their experiments on healthy and pancreatectomized dogs, Bornstein and Loewenberg conclude that hyperglycemia due to pilocarpine or to chloroform anesthesia does not depend on the pancreas.

Sex and Action of Alcohol.—Abderhalden and Wertheimer found that female mice are much more resistant to the action of alcohol than the males.

Antirachitic Factor in Grass Grown in Darkness.—Völtz and Kirsch found that grass seeds (Lolium perenne) do

not contain the antirachitic factor. When the seeds germinate, the factor appears even if the grass has grown in complete darkness. Consequently the antirachitic vitamin is not necessarily produced by irradiation of a provitamin.

Deutsche medizinische Wochenschrift, Berlin

53: 1121-1162 (July 1) 1927

Synthalin Treatment. F. Umber.—p. 1121.
*Alimentary Factor in Anemia. H. Aron.—p. 1125.
Physical and Mental Factors, Especially in Chorea. H. Prinzhorn.—p. 1128.
Pains in the Side. H. Herxheimer.—p. 1130.
Focal Infection. E. Precht.—p. 1131.
Widal Reaction After Typhoid Vaccination. Schembra.—p. 1133.
Superinfection in Experimental Syphilis. R. Strempel and G. Armuzzi.—p. 1134.
*Cesarean Section After Death. S. Joseph.—p. 1135.
Muscle Injuries in Athletics. G. Rosenburg.—p. 1136.
Pharmacodynamics of Reticulo-Endothelial System. N. von Jancsó.—p. 1137.
Hysterical Reactions. E. Siemerling.—p. 1138.
*Perforation of Gastric Ulcer. M. Siebner.—p. 1141.
*Drug Rash as Therapeutic Factor. H. Westphalen.—p. 1141.
Standardization of Vitamins. W. Gehlen.—p. 1142.
Secondary Suture of Ruptured Perineum. E. Lenz.—p. 1142.
*Treatment of Invagination in Infants. L. Finkelstein.—p. 1143.
Apparatus for Wassermann Test. W. Heimann.—p. 1144.
History of Hasheesh and Opium. E. Huber.—p. 1145.

Alimentary Factor in Anemia.—Aron's curves on the frequency of anemias (including the pernicious) in children and adults show a remarkable parallelism with the incidence of infantile scurvy and other results of economic distress. He is in favor of prolonged administration of large amounts of fruits, kefir and raw meat juice. Two or three tomatoes, the juice from three oranges, one lemon and from half a pound of raw meat, three or four raw carrots (or their juice) should be eaten daily. Such an addition to the diet also prevents constipation which has an unfavorable influence in anemia. He believes that sulphureted hydrogen developed in the intestines is one of the injurious agents and that the effect of large doses of iron (not less than 1 or 2 Gm. a day) may be explained by its power of combining with such gases.

Cesarean Section After Death.—A woman, in the seventh month of pregnancy, suffering from syphilitic insufficiency of the aortic valves, died in an attack of angina pectoris just after arriving at the obstetric clinic. The fetal heart sounds were uncertain. A transperitoneal cesarean section was done without any further examination or preparation. The child was asphyctic, but was resuscitated in about twenty minutes. It showed no signs of syphilis to date, a period of several months.

Perforation of Gastric Ulcer.—Instead of the usual irradiation of the pain toward the shoulder, Siebner's patient had an excruciating pain in the right arm, together with other signs of perforation. He recovered after the surgical intervention, which revealed perforation of an ulcer situated in the anterior wall of the duodenum, near the pylorus.

Drug Rash as Therapeutic Factor.—The migraine of Westphalen's patient was mitigated by daily administration of 0.1 Gm. of phenobarbital, until the drug had to be discontinued because of a toxic itching dermatosis. The patient had not had any attacks of migraine since.

Treatment of Invagination in Infants.—In abortive cases Finkelstein attempts reposition by cautious massage of the invaginated part. Subjective improvement of the child should not mislead as to the prognosis. If the bloody evacuations persist, prompt surgical intervention is indicated.

53: 1163-1206 (July 8) 1927

*Scarlet Fever. U. Friedemann and H. Deicher.—p. 1163.
Scarlet Fever Streptococci and Tissues. H. Dold.—p. 1165.
Predisposition to Scarlet Fever. G. Lenart and C. Sándor.—p. 1167.
Period of Danger of Transmission of Scarlet Fever. H. Helbich.—p. 1168.
*Scarlet Fever Serum. F. von Bormann.—p. 1169.
Septic Diphtheria. Canon.—p. 1171.
*Organ Extracts Versus Hormones. Lüttge and von Mertz.—p. 1172.
Reinoculation of Syphilitic Rabbits. W. Frei.—p. 1174.
Prognosis of Syphilitic Mesaortitis. J. Heller.—p. 1176. C'td.
Functional Changes of Duodenal Peristalsis. K. Eimer.—p. 1179.
Hysterical Reactions. E. Siemerling.—p. 1181. C'cn.
Variability of Pathogenic Agents. O. Stickl.—p. 1183.
Reagents for Medical Examinations. M. Piorkowski.—p. 1183.
Weak Roentgen Irradiations. W. Wiegels.—p. 1185.
Tamponade Versus Artificial Prolapse in Uterine Hemorrhage. C. Schmidt.—p. 1186.
Politics and Social Insurance. K. Finkenrath.—p. 1187.

Scarlet Fever.—It is pointed out by Friedemann and Deicher that Dick's method of identifying scarlet fever streptococci by their toxin gives reliable results, but is too difficult to be suitable for diagnosis of scarlet fever. Hemolytic streptococci are of diagnostic value only in convalescents: for practical purposes any hemolytic streptococcus in such subjects should be regarded as scarlet fever streptococcus and the carriers isolated as long as they harbor them. They released fifty convalescents early (even in the fourth week) after three cultures from the pharynx had proved negative. None of them caused any infection at home. On the other hand, five infections were traced to some of the thirty-nine convalescents released after a longer period of isolation (six weeks), but with streptococci in their throats.

Scarlet Fever Serum.—Von Bormann finds that the serum from the Marburg Behring plant, prepared with a mixture of scarlet fever streptococci and their toxin, has only excellent antitoxic properties. Its bactericidal action is nil.

Organ Extracts Versus "Hormones."—Lüttge and von Mertz suggest more scepticism in using the term "hormone" for extracts from organs. For instance, the extract which they use for diagnosis of pregnancy is—except for the addition of acid—identical with Zondek's solution of the ovarian hormone. The latter may be used for the pregnancy reaction. Since they are able to prepare their extract from any organ, they advise caution until further developments.

Folia Haematologica, Leipzig

34: 65-143 (June) 1927

The Myeloblast. H. Downey.—p. 65. C'td.
*Necrobiosis of Leukocytes in Vitro. W. Parrisius and W. Schlopsnies.—p. 90.
Vital Staining of Myeloblasts. M. E. Simpson and J. M. Deming.—p. 103.
Physiology of Digestive Leukocytosis. W. G. Tschishikow.—p. 125.

Necrobiosis of Leukocytes in Vitro.—Parrisius and Schlopsnies kept citrated blood in tubes and from time to time removed samples. The mature polymorphonuclears (with the exception of eosinophils) degenerated first. Lymphocytes and myeloblasts remained intact much longer.

Klinische Wochenschrift, Berlin

6: 1265-1312 (July 2) 1927

Therapeutic Pedagogics. A. Homburger.—p. 1265.
*Spontaneous Thrombosis of Veins. W. Starlinger and S. Sametnik.—p. 1269.
Transmission of Tumors. E. Haagen.—p. 1272.
*Bactericidal Action of Tissues. P. Saxl and F. Donath.—p. 1273.
Estimation of Uric Acid in Urine as Renal Function Test. H. Lucke.—p. 1275.
Colorimetric Tests. E. Komm and K. Sonntag.—p. 1275.
Hemolytic Jaundice. H. Meyer.—p. 1277.
*Absence of Plantar Reflexes. F. Kino.—p. 1280.
*Local Anesthesia in Labor. E. Pribram.—p. 1282.
Agent of an Epidemic Transmitted by Ice Cream. H. Braun and F. Mündel.—p. 1286.
"Titration of Gastric Acidity After Buffer-Free Meal." H. Kalk.—p. 1288.
"Ovarian Hormone in the Blood." R. T. Frank.—p. 1288.
Ergosterol and Antirachitic Vitamin of Cod Liver Oil. A. Adam.—p. 1289.
Lactic Acid Content of Cerebrospinal Fluid. A. Wittgenstein and A. Gaedertz.—p. 1289.
Rare Cause of Sciatica. I. Roth.—p. 1290.
Color Index in Pernicious Anemia. W. W. Winogradow.—p. 1290.
Occupational Therapy in Mental Disease. Kahlbaum.—p. 1294.
Prussian Law on Epidemics. Seligmann.—p. 1309.

Spontaneous Thrombosis of Veins.—Starlinger and Sametnik found the iso-electric point of blood platelets at p_H 5.4 to 4.7. The electronegative charge of the platelets is lowered, if the concentration of fibrinogen and globulin, which have only a comparatively small charge, increases. This decrease in the electrostatic charge of the blood platelets enables them to agglutinate, if the blood stream is slow.

Bactericidal Action of Tissues.—Bactericidal extracts were obtained by Saxl and Donath from triturated organs, especially bone marrow, lungs, and spleen. Distilled water must

be used instead of sodium chloride solution; they recall that van den Velden found the former superior to the latter for extraction of leukocytes or of blood.

Absence of Plantar Reflexes.—Kino draws attention to an overlooked symptom, which was described by Godflam and which he confirms. Bilateral absence of the plantar reflexes occurs in more than 10 per cent of healthy subjects. Unilateral absence is important and may be the only sign of a pyramidal lesion.

Local Anesthesia in Labor.—Pribram reports from the Giessen Clinic his experience with Gellert's method in 100 cases of labor. The method, reported previously in these columns, consists of paracervical anesthesia with simultaneous injections of solution of pituitary, followed by conduction anesthesia of the pudendal nerve. Pribram had excellent results. The only strict contraindication is inflammation of the adnexa or vagina. It is advisable to exclude women with fever of unknown etiology and women with contracted pelvis, because in the latter case the labor usually lasts longer than the anesthesia. Labor is, however, shorter than in untreated cases and there are fewer ruptures of the perineum; none occurred in his seven older primiparae (from 31 to 42 years of age).

Medizinische Klinik, Berlin

23: 97-1008 (June 30) 1927

Roentgen-Ray Examination of the Heart. A. Slauck.—p. 971.
Hypersensitiveness in Eczemas. P. Tauchau.—p. 974. C'cn.
Dyspnea. Ewig.—p. 978.
Open Punctures of the Pleura. O. David.—p. 980.
Aleukemic Myelosis and Osteosclerosis. F. Reiche.—p. 981.
Transverse Lesion of the Spinal Cord in Pregnancy and Neurofibromatosis. E. Hirsch.—p. 983.
*Treatment of Schizophrenia with Salicylates. M. Margulies.—p. 984.
Physical Treatment of Hypertension. A. Petoe.—p. 985.
"Gastritis and Duodenitis in the Pathogenesis of Ulcers." G. E. Konjetzny and H. Puhl.—p. 986. C'td.
Pneumonia Not Due to Occupational Injury. Von Schnizer.—p. 992.
Cancer and Its Treatment. O. Strauss.—p. 993.
Social Insurance in France. K. Finkenrath.—p. 1007.
Hemorrhage During and After Labor. H. H. Schmid. Supplement.—p. 83.
Hemorrhage in Abortion. A. Hellebrand. Supplement.—p. 103.

Treatment of Schizophrenia with Salicylates.—Margulies observed improvement in about one half of his schizophrenic patients treated with intravenous injections of a 20 per cent solution of sodium salicylate. Two doses of 10 cc. each were injected daily for five days or longer.

Wiener klinische Wochenschrift, Berlin

40: 837-868 (June 30) 1927

*Macrocytosis as Sign of Chronic Interstitial Pancreatitis. G. Holler and H. Kulka.—p. 837.
Infectious Gangrene. W. D. Zinserling.—p. 841.
*Pathogenesis of Purpura. T. Mironescu and A. Perlstein.—p. 843.
*Diathermy or Galvanization? J. Kowarschik.—p. 845.
Auscultation with the Electroscope. N. Jagić and C. Spengler.—p. 847.
"Sensitiveness of the Skin to Rays." R. Grann and G. Holzknecht.—p. 848.
Reply. L. Freund.—p. 849.
Problems of Disinfection in Tuberculosis. M. Eugling.—p. 850.
Surgery of Angina Pectoris. E. Spiegel.—p. 853.
*Neuroses in Children. J. K. Friedjung.—p. 855.
Syphilis and Life Insurance. M. Oppenheim. Supplement.—pp. 1-12.

Macrocytosis as Sign of Chronic Interstitial Pancreatitis.—Increase in the average diameter of erythrocytes was found by Holler and Kulka in all their patients with chronic interstitial pancreatitis. The majority of patients with ulcers of the duodenum who had some clinical signs of an involvement of the pancreas had also macrocytosis with a slightly elevated color index.

Pathogenesis of Purpura.—Mironescu and Perlstein report a case of fulminating purpura apparently due to streptococcus sepsis. The hemorrhages were arranged symmetrically. The number of blood platelets was normal. Destructive changes of the spinal ganglions were found at necropsy.

Diathermy or Galvanization?—Kowarschik pleads for the use of the direct current, especially in treatment of neuralgia and neuritis. Deforming arthritis may be favorably influenced. He had better results with galvanization than with diathermy.

Neuroses in Children.—The necessity for avoiding an excess as well as a deficient display of love is emphasized by Friedjung. Both are injurious. The child should not be surrendered to the foolishness of prejudiced grandmothers, to the sultry tenderness of aging maiden aunts, nor to the playfulness of his own parents. Unless the economic distress of the parents is extremely great, their bed is no place for the child. Even the mere sharing of the parent's bedroom constitutes a serious danger to the child's healthy mental development. Too much love—in only children—is another cause of neurosis. The foster child, the ugly or untalented, are in need of sympathetic understanding. So is the first child after the birth of a second, especially if the first is a girl and the second a boy. Senseless and cruel punishments do only harm. Children should not be deceived and should not be spoiled when they are ill. If a neurosis has become manifest, attempts to change the conditions at home are frequently unsuccessful. New surroundings will do more good.

Zeitschrift f. d. ges. experimentelle Medizin, Berlin

56: 271-534 (June 18) 1927

Synthetic Drugs Related to Epinephrine and to Histamine. S. Loewe.—p. 271.
Action of Sulphatase. C. Neuberg and J. Wagner.—p. 334.
*Studies of Lymph After Pancreatectomy. R. Meyer-Bisch and F. Günther.—p. 344.
*Action of Acetylsalicylic Acid on Cooled Human Muscle. H. Menschel.—p. 358.
*Action of Roentgen Rays on Blood Proteins. P. Wichels and A. Behrens. p. 387.
Action of Veratrin. H. Rhode.—p. 398.
Chemistry of Nettle Poisons. F. Flury.—p. 402.
Theory of Action of Poisons. W. R. Glaser.—p. 410.
Pharmacology of a Pyrazolon Derivative. W. Lipschitz and J. Osterroth.—p. 433.
Action of Lobelia in Inhalation Anesthesia. H. Wieland and B. Behrens.—p. 454.
Microdetermination of Nitrogen. R. Ehrenberg.—p. 466.
Amount of Interstitial Fluid in the Frog's Muscle. P. Schulze.—p. 470.
Pilocarpine and Epinephrine Reaction of the Fallopian Tube in Estrus. F. Kok.—p. 477.
*Spasmophilic Conditions in Uremia. F. Mainzer.—p. 498.
*Fate of Dying Leukocytes in the Organism. R. Seyderhelm and C. Oestreich.—p. 503.
Protein Metabolism in Anaphylaxis. A. Schittenhelm and W. Erhardt.—p. 511.
Resection of the Sympathetic and Healing of Infected Wounds. W. Rieder.—p. 518.
Action of the Thyroid on Protein Metabolism. L. Lichtwitz and L. Conitzer.—p. 527.

Studies of Lymph After Pancreatectomy.—Meyer-Bisch and Günther found that a hyperosmotic solution of sodium chloride does not act as a substance stimulating production of lymph (lymphagogue) after pancreatectomy. The action of sodium bicarbonate in stimulating lymph production, however, is more pronounced than in a normal dog. The action of epinephrine, injected in such an animal after the injection of sodium bicarbonate, is reversed: the potassium-calcium ratio is lowered and the flow of lymph rarely increases. In a normal dog insulin acts in a similar manner. This experiment may perhaps explain in part the favorable action of sodium bicarbonate in diabetes.

Action of Acetylsalicylic Acid on Cooled Human Muscle.—Menschel studied the hardness and electric excitability of human muscles under the influence of cold. Administration of about 4 to 5 Gm. of acetyl salicylic acid restored the normal contraction curve of muscle cooled to 10 C. Alcohol (50 cc. of a 33 per cent solution) has the same effect, but the muscle becomes fatigued. The author uses the term "stiffness from cold" for the syndrome of hardness of a muscle, paralysis of its function and partial reaction of degeneration produced by cold.

Action of Roentgen Rays on Blood Proteins.—Wichels and Behrens found that normal individuals react to a roentgen irradiation by increase in serum albumin. Allergic individuals (including patients with asthma) react with globulinemia. When the irradiation was repeated during the height of the blood change, the reaction was reversed.

Spasmophilic Conditions in Uremia.—Spasmophilic symptoms were observed by Mainzer in three cases of uremia. He attributes the symptoms to an increase in the inorganic phosphorus content of the serum. The patients were acidotic.

Fate of Dying Leukocytes in the Organism.—Seyderhelm and Oestreich stained leukocytes from a case of empyema with congo red and injected them into rabbits. After being injected into a vein of an ear, the dead cells were first distributed over the entire organism, especially the lungs. Not one leukocyte passed the liver after an injection into the portal vein or splenic artery. The leukocytes retained in the liver were rapidly dissolved and the congo red was eliminated with the bile. In a few hours the liver also disposed of the leukocytes injected into the ear vein.

Zeitschrift für Immunitätsforschung, etc., Jena

51: 369-528 (June 30) 1927

Cobra Venom and Lipoid Antibodies. A. Simeons.—p. 369.
Bacteriophage. E. Fränkel and E. Schultz.—p. 382.
Mechanism of Complement Fixation in Glanders. S. M. Brin.—p. 392.
*Lysis of Tubercle Bacilli. M. Isabolinsky and W. Gitowitsch.—p. 402.
Biochemistry of Antigens. F. Przesmycki.—p. 408.
Agglutinative Analysis of Atypical Paratyphoid A Bacilli. T. Hayashi.—p. 420.
Idem.: In B. Breslaviensis. K. Aoki and T. Hayashi.—p. 435.
Peroral Immunization Against Diphtheria. H. Dold and W. Weyrauch.—p. 458.
Precipitin and Anaphylactic Antibodies and Proteins of Immune Serums. R. Doerr and C. Hallauer.—p. 463.
Action of Eel Serum on Surviving Blood Vessels. T. Takasaka.—p. 482.
*Nature of Wassermann Reaction. W. Frei and S. Grünmandel.—p. 517.
Immune Precipitates and the Heterophilic Antigen Function of Guinea-Pig Serum. H. Lehmann-Facius.—p. 520.

Lysis of Tubercle Bacilli.—Isabolinsky and Gitowitsch found that lecithin dissolves tubercle bacilli in vitro and also in vito, if added to the micro-organisms introduced.

Nature of Wassermann Reaction.—Frei and Grünmandel injected in children a mixture of hog serum with an alcoholic extract of normal human placentas. They did not succeed in inducing a Wassermann reaction.

Zeitschrift für Krebsforschung, Berlin

25: 105-252 (July 4) 1927

Bavarian Cancer Statistics. N. Matzen.—p. 105.
Cancer Tissue Irradiated with Roentgen Rays. M. A. Magath.—p. 122.
Neutral Red Reaction with Serum in Cancer. A. H. Roffo and H. Degiorgi.—p. 136.
Squamous Cell Carcinoma in a Horse. H. Berger.—p. 141.
Carbohydrate Metabolism of Tumors. C. Fahrig.—p. 146.
*Production of Tumors by the Spleen of a Sarcomatous Rat. F. Blumenthal et al.—p. 229.
Tar Tumors in Fowls. S. Choldin.—p. 235.
*Tumors in Plants. C. Rehwald.—p. 247.

Production of Tumors by Spleen from Sarcomatous Rat.—Blumenthal, Auler and Solecka injected a suspension of the apparently normal spleen of sarcomatous rat into other rats. One of these developed a transplantable tumor, which was histologically different from the sarcoma of the first rat.

Tumors in Plants.—Proliferation of cut surfaces was obtained by Rehwald in various plants without application of any irritants, such as lactic acid. There was a great difference in the behavior of the proximad and distad surfaces. This factor of polarity has been apparently overlooked by many other investigators. The proliferation occurs not only on the surface, but also underneath it. This, however, is not due to invasion of the deep parts.

Zeitschrift für Kreislaufforschung, Leipzig

19: 441-472 (July 1) 1927

Congenital Idiopathic Hypertrophy of the Heart. K. Oberhammer.—p. 441.

Zentralblatt für Chirurgie, Leipzig

54: 1105-1152 (April 30) 1927

Deutschländer's Disease of the Metatarsals. M. Hackenbroch.—p. 1106.
Bleeding from the Ovarian Follicle. C. Strauch.—p. 1109.
Case of Fibroma of the Stomach. M. Scharapo.—p. 1109.
Experimental Thrombosis. F. Emmerich.—p. 1111.
Paralysis of the Axillary Nerve from Traction in Anesthesia. L. Anfänger.—p. 1112.
Luxation of the Os Naviculare Carpi. S. A. Pokrowsky.—p. 1113.
Asepsis in Operations. P. Gunkel.—p. 1115.
"Electric Aspiration" of Fluids During Operations. T. Fohl.—p. 1118.
*Dangers of Joseph's Squeezing Method in Anastomoses. H. Magnus.—p. 1123.

Dangers of Anastomosis with Joseph's Squeezing Instrument and a Single Layer Suture.—Magnus no longer uses this method, since, at necropsy on one of his patients on whom it was used, it appeared that the gastro-enterostomy opening had closed spontaneously within a few days. In consequence of the blind ending, the stomach suture had proved insufficient and abscess had developed.

54: 1153-1216 (May 7) 1927

Roentgen Irradiation and Inflammation. L. Heidenhain.—p. 1154.
*Sulphur Treatment of Surgical Diseases. E. Bircher.—p. 1155.
*Local Anesthesia in Operations on the Stomach. H. Hilarowicz.—p. 1157.
Atrophy of Gastric Mucosa in Ulcer. C. Hammesfahr.—p. 1161.
Rôle of Appendicitis Hernialis in the Origin of Sliding Hernias. N. Garber.—p. 1162.
Free Transplantation of Veins in Repair of Arteries. A. Zeitlin.—p. 1164.
Roentgen-Ray Examinations at the Bedside. J. Sommer.—p. 1168.

Sulphur Springs in Treatment of Surgical Disease.—Bircher comments on the good results in surgical tuberculosis, osteomyelitis, phlegmons, compound fractures, etc., from the use of the water of the hot sulphur springs of Schinznach. The best results in tuberculosis are seen when the balneotherapy is combined with surgical treatment.

Local Anesthesia in Operations on the Stomach.—The technic of the sphlanchnic anesthesia used in the university clinic at Lwów, which follows in the main Roussiel's modification, is detailed. The painlessness and muscular relaxation are as great as in deep narcosis, and, with correct technic, Hilarowicz asserts, serious by-effects can almost certainly be avoided.

Zentralblatt für Gynäkologie, Leipzig

51: 1353-1416 (May 28) 1927

Pregnancy and Mitral Stenosis. R. T. von Jaschke.—p. 1354.
Anatomy of the Menstruating Uterine Mucosa. H. Meyer-Rüegg.—p. 1357.
Is Menstruation Necessary to the Woman's Health? W. Latzko.—p. 1359.
*Roentgen-Ray Diagnosis of Tubal Pregnancy. P. Schneider and F. Eisler.—p. 1360.
Premature Separation of the Placenta with Severe Hemorrhage. H. Küstner.—p. 1369.
Combined Thymus and Pituitary Extracts in Obstetrics. E. Graff.—p. 1373.
Apoplectic Hemorrhage in Eclampsia. R. Jaffé.—p. 1387.
Cervical Pregnancy. H. Gänssbauer.—p. 1393.
Local Vaccinotherapy. P. E. Falk.—p. 1398.

Roentgen-Ray Diagnosis of Tubal Pregnancy.—Ten cases of tubal pregnancy were successfully diagnosed by Schneider and Eisler by means of the roentgen ray. They publish roentgenograms and sketches and discuss the interpretation of the shadows obtained under various conditions.

Mikrobiologicheskiy Jurnal, Leningrad

4: 165-284, 1927. Partial Index

Agglutination of Scarlet Fever Streptococci. A. V. Reznikova and P. I. Kuperstein.—p. 205.
*Presence of Streptococci in Scales of Scarlet Fever Patients.—M. I. Kanevskaya.—p. 209.
Experimental Gonorrhea in Rabbits. A. V. Pribyleff and E. T. Pavlova.—p. 228.

Presence of Streptococci in Desquamation Scales of Scarlet Fever Patients.—Search for streptococci in the scales was made by Kanevskaya in forty patients with scarlet fever. In each case, the search was carried out three times during the desquamation period. In thirty cases the hemolytic streptococcus was found, in five cases *Streptococcus viridans*. In the remaining, the streptococcus was absent. By the thirtieth day of the disease the streptococci had disappeared from the scales in most cases. Kanevskaya is inclined to believe that the streptococci present in the scales have their origin not in the skin, but in the blood. A thorough cleansing of the skin did not prevent the appearance of the streptococcus in the scales.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

71: 2215-2330 (April 23) 1927

*The Biologic Basis of Human Development. L. Bolk.—p. 2216.
*A Psychic Law in the Structure of the Brain. C. U. A. Kappers.—p. 2226.
Roentgen-Ray Examination in Periesophagitis. E. Huizinga and S. Keijser.—p. 2248.
Cause of Torsion of the Pedicle in Ovarian Tumor. C. E. Peters.—p. 2250.
Ileus from Perforation of the Uterus. A. G. J. Hermans.—p. 2256.

The Biologic Basis of Human Development.—"Retardation theory" is the designation given by Bolk to the theory which

he here elaborates. The problem of development, he asseverates, is an entirely different one from that of origin. The specific characteristics of man, both physiologic and anatomic, have a common cause, change in metabolism, and a similar action, retardation of development. Compared with his closest zoologic relations, man, in both morphology and functions, has retained a fetal character; his development has stopped at a stage which, in the higher primates, is still a fetal stage. The author is aware that this conclusion runs diametrically counter to that of Haeckel. Among the anatomic peculiarities of man that he offers in evidence are orthognathism, the absence of hair on the body, the white skin, the persistence of the cranial sutures, the labia majora and the ventral direction of the genital cleft in the woman, the structure of hand and foot and the shape of the pelvis. The shape of the head in man corresponds in general to that of the head of the primates in early fetal life. As regards function, retardation is shown in the long period of immaturity in the human species. This biologic peculiarity of man has brought about results and problems unknown among any species of animals. For instance, in no other species are offspring of differing ages under the care of the parents at the same time. Retardation of growth is thus at the basis of the normal family life of human beings. Another peculiarity of human development, one to which Metchnikoff has called attention, is the dissimilarity of the speed with which different systems mature, i. e., of the retardation to which they are subjected. The result of this peculiarity is that sexual precocity is a normal phenomenon in the human species. What is called sexual precocity is merely a higher degree of a disharmony that is biologic in man. This, again, has resulted in social and hygienic problems known only to man. The principal difference between his theory and current theories, Bolk states, is that in the latter the cause of the characteristic features of human development are sought outside the organism, while he finds it within the organism.

A Psychic Law in the Structure of the Brain.—In this comparative study of the anatomy of the brain, Kappers shows that structure is influenced by the associations of function.

71: 2331-2450 (April 30) 1927

*Carcinoma in the Tropics. T. Wieberdink.—p. 2334.
Precocious Ossification of an Epiphyseal Line. W. F. Wassink.—p. 2339.
Rhythmic Phenomena of Normal and Diseased Nerves. H. de Jong.—p. 2345.

Tumors in the Native Population of Java.—Wieberdink critizes the official statistics in regard to carcinoma. Its rarity in tropical countries is, in his opinion, partly illusory. He presents detailed hospital statistics, showing 175 tumors (the great majority malignant) among 9,660 patients. Carcinoma of the breast, which has been said not to exist in the East Indies, especially in women, was present in ten patients, six of whom were natives, three Chinese, and one a European. One of the Chinese was a man, the rest of the patients were women. He deplores the tendency to assume one of the common tropical diseases without a sufficiently thorough examination. In ten years he has seen only one operable carcinoma of the rectum. All the others had been too long under treatment for dysentery.

71: 2451-2602 (May 7) 1927

Fighting Leprosy in Dutch Guiana and the Moluccas. P. Cool.—p. 2453.
A Rare Tumor of the Liver. J. M. Planteydt.—p. 2456.
Spirochaetosis Icterohaemorrhagica. G. C. E. Burger.—p. 2460.
Method for Extracting the Lower Wisdom Teeth. J. J. de Vries.—p. 2463.
*Typhoid Fever in Children. D. Herderschée.—p. 2468.
Hygienic Regulations in Antwerp in the Fifteenth Century. A. F. C. van Schevensteen.—p. 2479.
*The Great Editors of Hippocrates. F. C. Unger.—p. 2493.
Popular and Ancient Cures for Animal Bites and Gore Wounds. C. Bakker.—p. 2506.
History of Scabies and Acarus Siro. A. C. Oudemans.—p. 2519.

Typhoid in Children.—Among 1,500 typhoid patients, of all ages, only two were less than a year old, ninety-seven were less than 5 years old. In the next five years, the number more than doubled, becoming as great as for young adults. The prognosis Herderschée found to be much more favorable than in grown persons. Under 5 years, the mortality was 2 per cent; between 5 and 10 years, 4.4 per cent; between 10 and 15, 7.5 per cent. Between 15 and 20 (when the incidence also was greatest) it jumped to 20 per cent. The age does not appear to influence the results of the bacteriologic and serologic examinations, but the characteristic symptoms are usually less fully represented in children than in adults, with the result that a longer time is required to arrive at the probable diagnosis.

Editors of Hippocrates.—Unger gives brief and entertaining sketches of the great editors of Hippocrates from Caelius Calcagninus in the sixteenth century, "spiritual father" of Raphael and patronized by Popes Leo X and Clemens VII, to Littré, who began his great work of editing and translating the classic into French in 1834 and published the last volume in 1861. Calcagninus had published his edition in Latin; the first publication in the original Greek was the Aldine edition.

Hospitalstidende, Copenhagen

70: 383-406 (April 28) 1927

Digitalis Treatment. E. Warburg.—p. 383. C'td.
*Irradiation of Experimental Rickets in Rats. C. Sonne and E. Rekling.—p. 399.

Experimental Rickets in Rats Treated with Monochromatic Ultraviolet Rays.—Sonne treated young rats on a rachitic diet with monochromatic ultraviolet rays. It was observed that radiant energy of wavelength 297, 280, 265 and 253 millimicrons is antirachitic. Rays of 248 and 240 millimicrons seem to exert only a slight effect, 313 millimicrons had a very doubtful effect and 366 millimicrons none at all. The antirachitic effect of radiant energy of wavelength 227 millimicrons and less could not be demonstrated, because of its low intensity. The antirachitic rays, it is shown, extend at least as far as 253 millimicrons, considerably farther into the ultraviolet than does the solar spectrum.

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88: 561-664 (July) 1927

*Insulin in Diabetes Mellitus. H. F. Høst.—p. 561.
*Coincident Tuberculosis and Cancer in the Alimentary Tract. F. Harbitz.—p. 572.
Synthalin in Treatment of Diabetes. L. Stoltenberg.—p. 577.
Reports from Indherreds Hospital. C. Johannessen.—p. 581.
Case of Rupture of the Spleen. C. Johannessen.—p. 590.
Tumor of the Liver. C. Johannessen.—p. 591.
Acute Cholecystitis Without Stone, with Spontaneous Perforation of the Gallbladder. C. Johannessen.—p. 593.
Primary Cancer of the Ileum. C. Johannessen.—p. 598.
Cancer of the Kidney and the Pyelogram. E. Hjort.—p. 607.
*Diastase in Serum and Urine. C. K. Schaanning.—p. 612. C'td.

Insulin in Diabetes Mellitus.—Høst reports on eighty cases treated during the last four years. Two patients have died from diabetes. Sixty-four are still using insulin. Local reactions disappear after a time, wholly or in considerable part. Paresis of certain muscles and various mental disturbances have been seen. Fifty-three of the sixty-four report themselves able to work, eight of these are manual laborers. An important point in the prognosis is the absence of infections and other disease.

Coincident Tuberculosis and Cancer in the Alimentary Tract.—In Harbitz's first case, in a man, aged 22, with sudden death from pulmonary tuberculosis, necropsy revealed an ulcer in the lesser curvature, in which tuberculous and simple inflammation were found. He attributes the infection to swallowed sputum. The second patient, a man, aged 68, died after symptoms of gastric cancer with metastases in the peritoneum, liver and spleen. Necropsy showed an ulcer with adenocarcinomatous border and tuberculous base, and tuberculous nodules in the liver, spleen and peritoneum. A certain etiologic relationship was not established. In a man, aged 28, and a woman, aged 30, with tumor of the ileocecal region, tuberculosis and cancer seemed etiologically related, the tuberculosis being primary. In his fifth case, of tuberculosis and cancer of the esophagus, he considers the coincidence accidental.

Diastase in Serum and Urine.—Schaanning reviews the methods of determination of diastase and the relations of the diastase in the organism.